



SITE INSPECTION - ANALYTICAL RESULTS REPORT

**Durango Lead Smelter
Durango, Colorado**

CERCLIS ID# CO0001399633

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**ANALYTICAL RESULTS REPORT for
FOCUSED SITE INSPECTION**

**Durango Lead Smelter
Durango, La Plata County, Colorado**

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1.0 INTRODUCTION

This Analytical Results Report (ARR) of the Durango Lead Smelter site in Durango, La Plata County, Colorado (CERCLIS ID # CO0001399633), has been prepared to satisfy the requirements of Technical Direction Document (TDD) No. 9602-0001 issued to URS Operating Services, Inc. (UOS) on February 7, 1996, and amended by TDD No. 9602-0001A on February 23, 1996, by the Region VIII office of the U.S. Environmental Protection Agency (EPA). Field work at the Durango Lead Smelter site was conducted during the week of April 8 through 12, 1996, and followed the focused Site Inspection (SI) format (U.S. Environmental Protection Agency (EPA) 1992; EPA 1993). Field sampling activities were performed in conjunction with the sampling event for the Durango Copper Smelter site (CERCLIS ID# CO0001399930). A separate Field Sampling Plan and ARR were prepared for the Durango Copper Smelter site.

Field activities were conducted by UOS and followed the applicable UOS Technical Standard Operating Procedures (TSOPs) (URS Operating Services, Inc. (UOS) 1995). Field activities specifically included collecting sixteen environmental samples comprised of five surface water, and five sediment samples, and three residential soil samples, plus three field Quality Assurance/Quality Control (QA/QC) samples (in addition to the laboratory matrix spike/matrix spike duplicate (MS/MSD)) (Table 1).

The samples were shipped via Federal Express to contract laboratory program (CLP), routine analytical services (RAS) laboratories. Samples that were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and pesticides/PCBs were sent to Industrial & Environmental Analysts of Whippany, New Jersey. Samples analyzed for total metals were sent to SVL Analytical of Kellog, Idaho. Samples that were analyzed for total organic carbon (TOC) and hardness were sent to HydroLogic Laboratories, Inc. of Brighton, Colorado. This ARR is intended to be used in conjunction with the Durango Lead Smelter Field Sampling Plan (FSP) (UOS 1996a) and the Durango Lead Smelter Sampling Activities Report (SAR) (UOS 1996c) (Appendix A).

2.0 OBJECTIVES

The purpose of this focused SI was to gather data pertinent to the evaluation of the Durango Lead Smelter site with regard to the EPA's Hazard Ranking System (HRS) criteria. The specific objectives of this focused SI were to:

- Acquire and utilize non-sampling data (i.e., existing reports, analytical data, or physical measurements) documenting past releases from the site source areas;
- Identify and delineate receptor targets for the surface water pathway;
- Document potential releases of site contaminants to targets along the surface water pathway; and
- Determine resident populations subject to airborne contamination and collect soil samples.

3.0 BACKGROUND INFORMATION

3.1 SITE LOCATION AND DESCRIPTION

The Durango Lead Smelter site is located in the southeast quarter of Section 30, T. 35 N., R. 9 W., of the Durango West Quadrangle, La Plata County, Colorado. The site is located southwest of Durango, along the west bank of the Animas River (Figures 1 and 2). The approximate site coordinates are 37° 16' 03.00" N. latitude and 107° 53' 00.00" W. longitude (U.S. Geological Survey (USGS) 1963b).

3.2 SITE HISTORY AND PREVIOUS WORK

The Durango Lead Smelter site history extends from 1882 through approximately 1935. The San Juan Smelting and Mining Company, originally from Silverton, Colorado, began operation at the site in 1882. In 1887, it was reported to have smelted over \$1 million worth of silver, lead, gold, and copper, and was the largest smelter in the San Juan Mountains. At the turn of the

century, all the major smelting corporations in Durango merged to become the American Smelting and Refining Company at this location. The American Smelting and Refining Company closed in the mid 1930s, and was dismantled in approximately 1942 (Smith 1980).

The United States Vanadium Corporation built a uranium processing mill at the site of the former lead smelter operation in 1942. The uranium mill operation and the associated tailings at this location were the focus of a U.S. Department of Energy (DOE) Uranium Mill Tailings Remedial Action (UMTRA) that was conducted to clean up the uranium mill tailings deposited along the Animas River. During the removal of those tailings (from 1986 to 1991), the DOE also removed the remaining lead smelter stack, building materials and rubble associated with the former lead smelter. The slag, a by-product of the lead smelter operation, was left at the site because it was not within the scope of responsibility of the DOE under the UMTRA project. The slag was graded and the site area was covered with clean backfill and topsoil and vegetated. The west bank of the Animas River was riprapped to minimize erosion (U.S. Department of Energy (DOE) 1995). The UMTRA activity and associated remediation, while not being the subject of this focused SI, have played a major role in the redistribution of lead slag wastes.

The Standard Smelting Company operated from 1892 through 1911, approximately three-quarters of a mile downstream of the Durango Lead Smelter site (Figure 2) (Smith 1980). This site is the focus of a site investigation by UOS for the EPA under TDD 9602-0007, the Durango Copper Smelter, CERCLIS ID# CO0001399930.

3.3 SITE CHARACTERISTICS

3.3.1 Physical Geography

The Durango Lead Smelter site is located along the west bank of the Animas River. The site is located approximately 6,520 feet above mean sea level in La Plata County (USGS 1963a). The Durango Lead Smelter site is approximately 15 acres in size, or 653,400 square feet (DOE 1995; UOS 1996a). Site topography is generally flat, with a slight southeastward slope for drainage toward the Animas River. The slag was graded during

the UMTRA project before backfill was brought in (Colorado Department of Public Health and the Environment (CDPHE) 1996; UOS 1996a). The site area is situated in a transitional area between the Southern Rocky Mountain Physiographic Province and the Colorado Plateau Province (Bureau of Reclamation (BOR) 1981).

3.3.2 Geology

The former lead smelter area is underlain by dark gray to black Mancos Shale, which is more than 1,700 feet thick. The Mancos Shale is truncated by the Smelter Mountain fault south of the site area (Figure 2). The Point Lookout Sandstone and Menefee Formations outcrop south of the site area and south of the Smelter Mountain fault. At the site area along the base of Smelter Mountain, the Mancos Shale is directly overlain by a layer of colluvium up to 25 feet thick. The colluvium consists of poorly sorted, silty soil from Smelter Mountain. Along Lightner Creek and the Animas River, deposits of river-laid sand and gravel up to 15 feet thick occur over the shale bedrock and under the colluvium (DOE 1995).

3.3.3 Hydrogeology

Hydrostratigraphic units at the lead smelter site include the consolidated bedrock unit overlain by unconsolidated surficial deposits. Together the surficial hydrostratigraphic units (alluvium and colluvium) and the bedrock unit (the uppermost few feet of weathered, fractured Mancos Shale) directly under the surficial deposits comprise the uppermost aquifer in the site area. Groundwater occurs in a shallow alluvial aquifer overlying bedrock at the former lead smelter site. Groundwater at the site moves predominantly through the alluvium overlying the low-permeability Mancos Shale bedrock and discharges into the Animas River to the east (DOE 1995).

In gravels above the bedrock, the hydraulic conductivity is estimated to be 7×10^{-3} centimeters per second (cm/sec). In the colluvium near the base of Smelter Mountain, recharge is primarily by runoff from the mountain and by infiltrating precipitation. Sand

and gravel deposits receive recharge from Lightner Creek and the Animas River (DOE 1995).

3.3.4 Hydrology

Site topography indicates that surface water drainage via overland flow is directed to the south and east towards the Animas River (USGS 1963b; UOS 1996c). The annual mean discharge rate of the Animas River at Durango is 822 cubic feet per second (cfs); the highest annual mean discharge rate is 1,366 cfs (water years 1898-1994). The discharge rate is recorded at the USGS Durango gauging station approximately one mile upstream of the site (USGS 1994). Upstream of the site area, the Animas River has a drainage area of approximately 770 square miles (DOE 1995). The site lies within the Animas River 100-year flood plain (BOR 1981).

3.3.5 Meteorology

The Durango Lead Smelter site is located in a semiarid climate zone. The mean annual precipitation as totaled from the University of Delaware (UD) database is 12.83 inches. The net annual precipitation as calculated from precipitation and evapotranspiration data obtained from the UD database is 1.61 inches (University of Delaware, Center for Climate Research, Department of Geography 1986). The 2-year, 24-hour rainfall event for this area is 1.5 inches (Dunne, Thomas and Luna B. Leopold 1978).

3.3.6 Existing Source Data

The buried slag that remains along the west bank of the Animas River is approximately 25 feet thick and covers approximately 15 acres. The volume of slag has been estimated at approximately 200,000 cubic yards of material (DOE 1995).

In 1989, 11 slag samples were collected by MK-Ferguson Company and sent to Analytica Labs in Albuquerque, New Mexico, for EP Toxicity and Total Metals analysis. The slag

samples were collected from the existing slag (a by-product of the lead smelter operation) at the location that was reclaimed under the UMTRA project. The slag material was not the responsibility of the DOE under the UMTRA Project so the slag material was graded and left during the reclamation of the UMTRA site (DOE 1989).

Surface samples and composite samples (as much as 12 feet below ground surface (bgs)) were randomly collected through visual identification of different slag types. Samples were analyzed according to EPA protocols published in SW-846 Test Methods for Evaluating Solid Waste, Third Edition, 1986. Five samples indicated concentrations of lead (EP toxicity extract) that exceeded the EP Toxicity maximum concentration action level of 5 parts per million (ppm) (highest concentration at 58 ppm) (DOE 1989). Review of the total metals data indicates that some analytes are above the ranges and/or averages, for element concentrations in soils in the conterminous United States. The following table displays the ranges and/or average and the highest concentration of analytes that exceeded these ranges (USGS 1984; DOE 1989).

Highest Concentrations of Analytes in Slag

Analytes	Average or Range (mg/kg)	Highest Concentration in Slag (mg/kg)
Antimony	0.5	70
Arsenic	5	480
Barium	500	8,100
Cobalt	10	160
Copper	20	5,400
Lead	10	25,000
Mercury	0.01	0.5
Molybdenum	2.5	150
Uranium	1	233
Vanadium	100	910

4.0 ANALYTICAL DATA

4.1 DATA VALIDATION AND INTERPRETATION

The sample data collected during this focused SI was reviewed using the HRS guidelines for analytical interpretation (Office of the Federal Register 1990). As reported in the analytical results in Tables 2 through 6, elevated concentrations of contaminants, as noted by a star (★), are determined by sample concentrations based on the following:

- If the sample concentrations are greater than or equal to three times the highest background sample concentrations and greater than or equal to five times the blank concentrations and greater than or equal to the sample quantitation limit (SQL); and
- If not detected in background or blank samples, the sample concentrations are greater than or equal to the SQL.

All data analyzed by the CLP RAS laboratories were validated by TechLaw, Inc. All data are acceptable for use as qualified in the data validation report. The complete data validation report, laboratory forms, and SQL calculations are located in Appendix D.

5.0 SURFACE WATER AND SEDIMENT PATHWAY

5.1 SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS

Global positioning system (GPS) data points were collected in the field to determine exact geographic sample locations. GPS data are located in the UOS SAR (Appendix A). Please refer to Figure 2 for sample locations.

The farthest downgradient samples on the Animas River were collected first. Samples were collected during low flow of the Animas River. The discharge rate of the Animas River during sampling was approximately 480 cubic feet per second (cfs) as recorded at the Durango USGS

Station (UOS 1996c). The annual mean discharge rate of the Animas River at Durango is 822 cfs (USGS 1994).

Samples DL-SW/SE-4 were collected along the west bank of the Animas River, approximately one and one-half miles downstream of the probable point of entry (PPE) and upstream of the former copper smelter site, downstream of the Santa Rita Bridge (Photo 1). Duplicate surface water sample DL-SW-5 was collected at this location.

Samples DL-SW/SE-3 were collected from the east bank of the Animas River approximately 0.85 miles downstream of the PPE, and approximately 0.15 miles upstream of the Santa Rita Bridge near the proposed Bureau of Reclamation pumping station (Photo 2). This location is at the south end of a city park and several people were observed fishing in this area.

The location of samples DL-SW/SE-2 was based on the location of the slag outcropping from the former Durango Lead Smelter site along the Animas River (Photo 3). The samples were collected from the PPE on the west bank of the river approximately three-quarters of a mile downstream of the Lightner Creek bridge, and just upstream of the Animas River kayak course. Slag was observed slumping into the Animas River at this location. Sediment samples were collected from among the cobbles and rocks along the bank.

Samples DL-SW/SE-1 were collected from the east bank of the Animas River, approximately one-quarter of a mile upstream of the Highway 160 bridge over the Animas River, just north of the Red Lion Inn (Photo 4). These samples were collected to identify background conditions in the Animas River. The MS/MSD volume was also collected at this sample location.

Samples LC-SW/SE-1 were collected from the north side of Lightner Creek just before it passes under Highway 160 (Photo 5). Lightner Creek at this location was approximately twenty feet wide, five feet deep, and flowing swiftly. These samples were collected to determine the conditions present upstream in Lightner Creek before it enters the Animas River.

5.2 SURFACE WATER AND SEDIMENT ANALYTICAL RESULTS

The surface water and sediment sample analytical results are reported in Tables 2 through 6. Laboratory data and validation comments may be found in Appendix D.

There were no elevated detections of organic compounds in surface water or sediment samples. Between one and seven semivolatile tentatively identified compounds (TICs) were detected in DL-SW-1, LC-SW-01, DL-SW-2, primarily consisting of unknown alcohols and unknown amides. In sediment samples DL-SE-1, LC-SE-1, and DL-SE-2, between four to six semivolatile TICs were identified, comprising of unknown organic acids and unknown condensation products.

There were no elevated detections of inorganic compounds in surface water samples. In sediment sample DL-SE-2 (PPE), elevated concentrations of inorganic compounds cadmium (498 ppm), vanadium (357 ppm), and zinc (28,500 ppm) were detected. The Superfund Chemical Data Matrix (SCDM) does not provide hazardous substance benchmarks for sediments; however the associated surface water food chain reference dose screening concentration (RDSC) benchmarks for cadmium, vanadium, and zinc are 0.68 ppm, 9.5 ppm, and 410 ppm, respectively (EPA 1995b).

Because there were no surface water detections at elevated concentrations, ambient water quality criteria (AWQC) benchmarks did not need to be readjusted with sample specific TOC and hardness values; hence this data is not reported in tables 2 through 6. TOC and hardness data can be found in Appendix D.

5.3 SURFACE WATER/SEDIMENT TARGETS

Municipal drinking water for the city of Durango is supplied from surface water which is collected from the Florida and Animas Rivers and then is mixed and supplied to the entire population of Durango. The main surface water intake for the municipal supply is located along the Florida River, a separate watershed from the Animas River which flows to the south approximately five miles to the east of the site (Figure 1). The municipal surface water intake

on the Animas River, at 29th Street in Durango, is located approximately two miles upstream of the site (Figure 1). Water from the Animas River is used primarily when there is a high demand on the municipal water supply, generally during the summer months (Durango Public Works 1996).

The Animas River is a recreational fishery (Colorado Division of Wildlife (CDOW) 1996). The Colorado Department of Wildlife stocks the Animas River with Brown Trout, Rainbow Trout, and Cutthroat Trout. Native species in the Animas River include the Blue Head Sucker (which is most abundant), Flannel Mouth Sucker, Mottled Sculpin, and Speckled Dace. Occasionally the non-native White Sucker is identified in the Animas. The stretch of the Animas from Lightner Creek (one mile north of the site area) to Purple Cliffs (approximately two and one-half miles downstream of the Durango Lead Smelter site) was used by approximately 6,200 fisherpersons from April 1990 through August 1990. The fishing limit is two fish, 16 inches or longer (artificial flies and lures only). The catch rate on this stretch of the Animas is 0.75 fish per hour or 1.2 fish per fisher per trip, or approximately 3,000 pounds per year (based on an estimate of 0.4 pounds per fish greater than or equal to a 16-inch fish) (CDOW 1996). Fisherpeople were observed during the sampling activities (UOS 1996c).

The Animas River, a recreational water body, is used as a kayak course adjacent to the site area (UOS 1996a). There are no private drinking water intakes identified along the Animas River downstream of the site (Durango Public Works 1996). Riverine wetlands were identified during site reconnaissance activities on February 20 and 21, 1996, and during site sampling activities by UOS personnel (UOS 1996a; UOS 1996c). Willow, cottonwood, and sporadic cattail growth was noted along the banks of the river during site sampling activities (UOS 1996c). Surface water and sediment sample locations were collected from areas where wetlands were observed.

6.0 RESIDENTIAL SOIL EXPOSURE PATHWAY

6.1 RESIDENTIAL SOIL SAMPLE LOCATIONS

Residential soil samples were collected from three properties for this focused SI. Please refer to Figure 2, Table 1, and the UOS Sampling Activities Report for exact sample locations and rationale (Appendix A, SAR). GPS data points were collected in the field to determine exact geographic sample locations and are listed in the UOS SAR (Appendix A). Signed access agreements were obtained from all property owners before samples were collected. Samples were taken from areas on the properties that the field personnel or residents believed could potentially be impacted by airborne contaminants derived from the site.

Three soil samples were collected on April 10, 1996, from various residences in and around Durango. Sample DL-SO-1 was collected from the back yard of the Camillia Potter residence at 118-116 County Road 206, approximately two miles north of the site, behind Smelter Mountain (Figure 2). The sample was collected approximately fifty feet behind the main house and thirty feet north of Lightner Creek (Photo 6). This sample was collected to ascertain background soil conditions.

Sample DL-SO-2 was collected from the westernmost side of the Canyon Club Mobil Home trailer park located approximately 1,600 feet southeast (downwind) across the Animas River and Highway 550 from the former smelter site. The sample was collected from the west side of the yard of Trailer #8 (Photo 7). The entire trailer park is encircled by a chain link fence, with individual properties readily accessible to those inside the trailer park. There are approximately 65 people residing in the Canyon Club Mobile Home Park.

Soil sample DL-SO-3 was collected from the southwest corner of the Lauren Hartley property at 277 E. Third Avenue. This property is located approximately 1,000 feet west (downwind) of the former lead smelter across the Animas River and Highway 550 (Photo 8). There are approximately four people residing at 277 E. Third Avenue.

6.2 RESIDENTIAL SOIL ANALYTICAL RESULTS

In residential soil sample DL-SO-2 (trailer park), lead (181 ppm), and silver (1.7 ppm) were detected at elevated concentrations. In residential soil sample DL-SO-3 (Hartley residence), copper (91.5 ppm), lead (302 ppm), manganese (1,310 ppm), and silver (2.1 ppm) were detected at elevated concentrations. The SCDM provides soil RDSCs for two of the four elevated compounds, manganese (390 ppm) and silver (390 ppm) (EPA 1995b).

6.3 RESIDENTIAL SOIL TARGETS

The elevated concentrations of inorganic compounds detected in the two soil samples collected from residences downwind of the site could be a result of historic airborne contamination from the Durango Lead Smelter site. According to an account of the concentrations of chemical elements in soils and other surficial materials of the conterminous United States, lead is typically found at an average 10 ppm, copper is typically found at an average of 20 ppm, and manganese is typically found at an average of 850 ppm (USGS 1984).

The Durango Lead Smelter site is owned by the state of Colorado. The UMTRA was conducted by the DOE. The source area (slag) was covered with a minimum of 18 to 24 inches of backfill and another 6 inches of topsoil during the UMTRA. Slag outcroppings were identified during the UOS site reconnaissance along the west bank of the Animas River (UOS 1996a). Movement of the slag by the DOE and the slag outcroppings that are currently present could account for concentrations of contaminants in nearby residential soils. Currently, the state of Colorado plans to sell the southern portion of the site (the location of the raffinate ponds) to the Bureau of Reclamation for the installation of a pumping plant as a part of the Animas/La Plata Wastewater Management Plan. The northern portion of the property (the former location of the uranium mill tailings and current location of buried lead smelter slag) is slated for purchase by the city of Durango (CDPHE 1996).

Access to the site is restricted by fencing and locking gates; however, while the field sampling crew was obtaining GPS data samples DL-SW/SE-2 (on-site PPE sample), approximately six to

eight people were seen passing mountain bikes over the gates and riding over the site area (UOS 1996a; UOS 1996c). Approximately 4,143 people reside within one mile of the site, of whom approximately 1,036 reside within one-quarter of a mile (U.S. Department of Commerce (USDOC) 1990). Other potential targets include federally listed threatened or endangered species that potentially may be present in La Plata County. These species include the Black-footed Ferret (endangered), Knowlton's Cactus (endangered), American Peregrine Falcon (endangered), Bald Eagle (threatened), Eskimo Curlew (endangered), and the Southwestern Willow Flycatcher (endangered). Critical habitat for the Mexican Spotted Owl (threatened) occurs in La Plata County (U.S. Fish and Wildlife Service (USFWS) 1996).

7.0 ADDITIONAL PATHWAYS

7.1 AIR PATHWAY

Waste slag from the former smelter operation was buried on site during the DOE UMTRA project. Slag outcroppings were observed during the UOS site sampling activities (UOS 1996c). Proximal targets of the site include the total population, 12,430 people, of the city of Durango which is situated within four miles of the site (USDOC 1990). The nearest residences (approximately five houses) are located on the east bank of the Animas River, approximately one-quarter of a mile to the east of the site. The site area has been backfilled with a minimum of 18 to 24 inches of clean backfill and another 6 inches of topsoil, and vegetated by the DOE during the UMTRA (CDPHE 1996). The prevailing wind direction is west-northwest down the river valley (DOE 1995). There are no U.S. Department of the Interior National Wetland Inventory (NWI) maps available for the Durango area. Cumulative wetlands within a four-mile radius of the site were estimated by field personnel during the sampling event to be less than 50 acres (UOS 1996c).

Additional targets within the air pathway include federally listed threatened or endangered species that potentially may be present in La Plata County. These species include the American Peregrine Falcon (endangered), Bald Eagle (threatened), Eskimo Curlew (endangered), the Southwestern Willow Flycatcher (endangered), Black-footed Ferret (endangered), and the

Knowlton's Cactus (endangered). Critical habitat for the Mexican Spotted Owl (threatened) occurs in La Plata County (USFWS 1996).

7.2 GROUNDWATER PATHWAY

The DOE has documented 20 wells within a two-mile radius of the site, that serve approximately 47 people based on 2.35 persons per household in Durango (DOE 1995; USDOC 1990). The Colorado State Engineers Office has records of 90 household-use-only well permits (that serve approximately 211 people) completed to the alluvium and bedrock within two to four miles of the site (State Engineer's Office 1996; USDOC 1990). While records for these wells exist, UOS attempted to sample the closest of these wells for the Durango Lead Smelter site, only to discover that these residences are all now supplied by municipal water from the Florida and Animas Rivers (Durango Public Works 1996; UOS 1996c). Development and utility policies for the city of Durango currently prohibit the drilling of private wells within the city limits (Durango Public Works 1996).

8.0 SUMMARY

The Durango Lead Smelter site history extends from 1882 through approximately 1935. The American Smelting and Refining Company closed in the mid 1930s, and was dismantled in approximately 1942. The United States Vanadium Corporation built a uranium processing mill at the site of the former lead smelter operation in 1942. The uranium mill operation and the associated tailings at this location were the focus of a DOE UMTRA that was conducted to clean up the uranium mill tailings deposited along the Animas River. The slag, a by-product of the lead smelter operation, was left at the site because it was not within the scope of responsibility of the DOE under the UMTRA project. The slag was graded and the site area was covered with clean backfill and topsoil and vegetated.

Field work conducted at the Durango Lead Smelter site during the week of April 8 through 12, 1996, involved the collection of field samples for laboratory analyses and non-sampling site-specific information. This information has been used in this report to evaluate the surface water and soil exposure pathways and associated receptors to determine if the Durango Lead Smelter site potentially impacts human health or the environment.

Soil samples were collected from three residences, two of which were downwind and within one mile of the Durango Lead Smelter site. In residential soil sample DL-SO-2 (trailer park), lead (181 ppm) and silver (1.7 ppm) were detected at elevated concentrations. In residential soil sample DL-SO-3 (Hartley residence), the following contaminants were detected at elevated concentrations, copper (91.5 ppm), lead (302 ppm), manganese (1,310 ppm/RDSC of 390 ppm), and silver (2.1 ppm/RDSC of 390 ppm). Residential soil samples were compared to a biased grab background sample collected from a residence upwind of site influences. According to an account of the typical concentrations of chemical elements in soils and other surficial materials of the conterminous United States, average of lead is 10 ppm, average of copper is 20 ppm, and average of manganese is 850 ppm.

Access to the site is restricted by fencing and locking gates; however, while the field sampling crew was obtaining GPS data from an on-site sample location, approximately six to eight people were seen passing mountain bikes over the gates and riding over the site area. Approximately 4,143 people reside within one mile of the site, of which approximately 1,036 reside within one-quarter of a mile. Other potential

targets include six federally-listed threatened or endangered species that may be potentially present in La Plata County. Critical habitat for the Mexican Spotted Owl (threatened) occurs in La Plata County.

There were no elevated detections of inorganic compounds in surface water samples. In the PPE sediment sample DL-SE-2, elevated concentrations of inorganic compounds cadmium (498 ppm), vanadium (357 ppm), and zinc (28,500 ppm) were detected. Cadmium and zinc both have the ability to bioaccumulate and both are above surface water foodchain reference dose concentrations. The SCDM does not provide benchmarks for sediments. Surface water and sediment samples were collected from areas that were observed to have wetland vegetation.

Municipal drinking water for the city of Durango is from surface water, primarily collected from a separate watershed from the Animas River. The municipal surface water intake on the Animas River is located approximately two miles upstream of the site. The Animas River is a recreational fishery that is stocked by the Colorado Department of Wildlife, and a recreational water body, which is used as a kayak course adjacent to the site area. There are no private drinking water intakes identified along the Animas River downstream of the site.

The DOE has documented 20 wells within a two-mile radius of the site. The Colorado State Engineers Office has records of 90 household-use-only well permits (that serve approximately 211 people) completed to the alluvium and bedrock within two to four miles of the site. While records for these wells exist, UOS attempted to sample the closest of these wells, only to discover that these residences are all now supplied by municipal water from the Florida and Animas Rivers. Development and utility policies for the city of Durango currently prohibit the drilling of private wells within the city limits.

9.0 LIST OF REFERENCES

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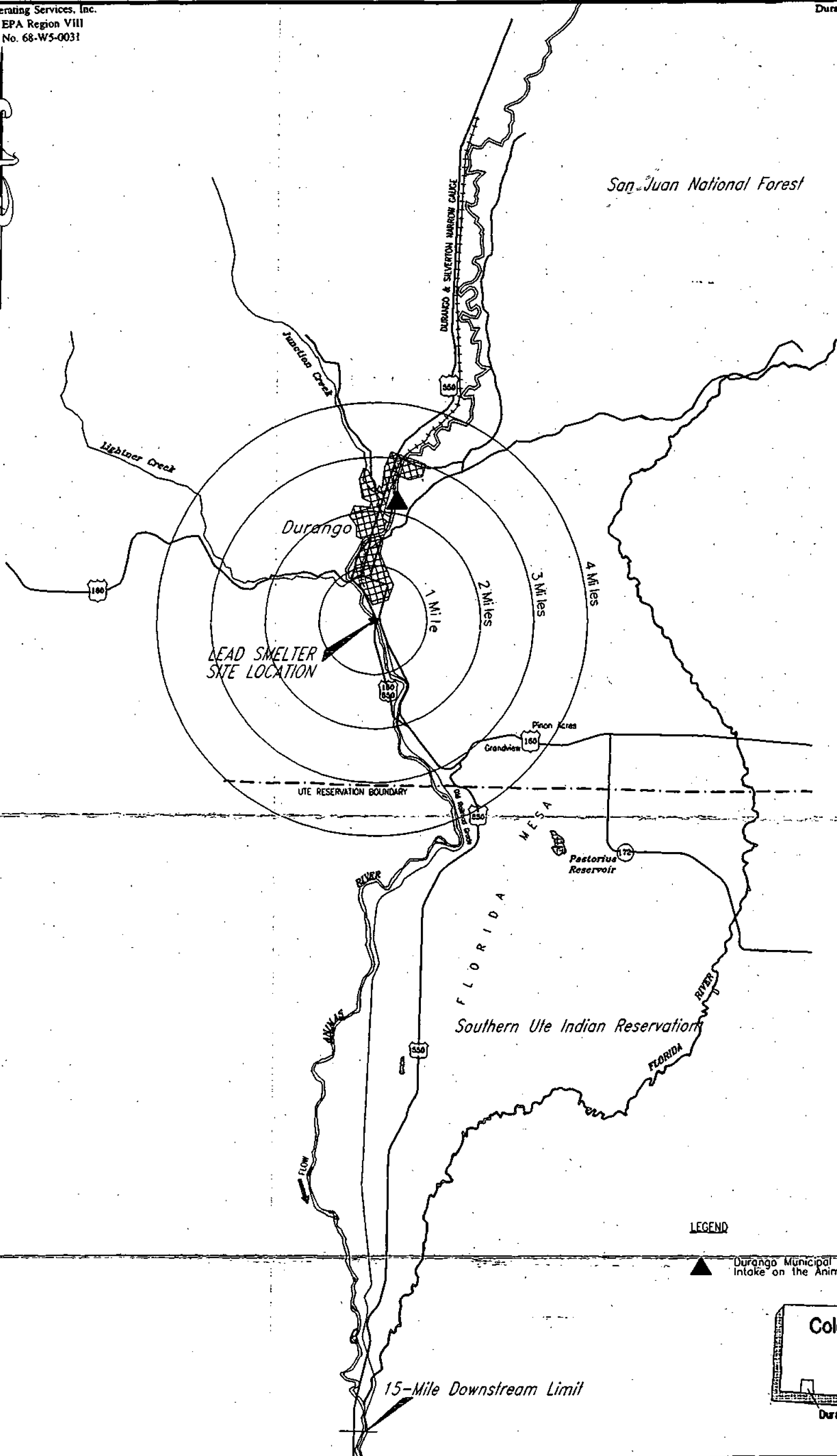
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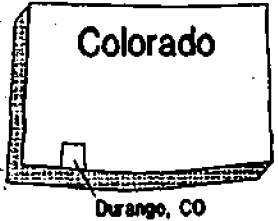
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LEGEND

▲ Durango Municipal Surface Water Intake on the Animas River



SOURCE:
 USGS 1983
 UOS 1996

	SITE INSPECTION
	UOS Job No. 75-60201
	Durango Lead Smelter Durango, Colorado
	Area of Influence Map Figure 1
August 1996	
	

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APPENDIX A

Sampling Activities Report

URS OPERATING SERVICES

1099 18TH STREET
SUITE 710
DENVER, COLORADO 80202-1908
TEL: (303) 291-8300
FAX: (303) 291-8296

April 23, 1996

Ms. Pat G. Smith
Site Assessment Manager
U.S. Environmental Protection Agency Region VIII
999 18th Street, Suite 500, Mail Code: EPR-ER
Denver, Colorado 80202-2405

Subject: START, EPA Region VIII, Contract No. 68-W5-0031, TDD #9602-0001
Site Inspection - Durango Lead Smelter site, Durango, La Plata County, Colorado
Sampling Activities Report

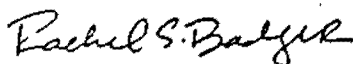
Dear Ms. Smith:

The following pages contain the Sampling Activities Report (SAR) for the Durango Lead Smelter site in Durango, La Plata County, Colorado. This report is prepared in partial fulfillment of TDD #9602-0001 and outlines field sampling activities conducted from April 8-12, 1996.

If you have any comments, please call me at (303) 291-8269.

Very truly yours,

URS CONSULTANTS, INC.



Rachel Badger
Project Manager



Eric Scott
Registered Geologist

Enclosures

cc: L. Durbin/UOS w/o attachments
File/UOS

**SAMPLING ACTIVITIES REPORT
FOR
DURANGO LEAD SMELTER SITE
DURANGO, LA PLATA COUNTY, COLORADO**

INTRODUCTION

The Field Sampling Plan (FSP), Revision 1, for the Durango Lead Smelter site was approved by the EPA Site Assessment Manager, Pat Smith, on April 2, 1996. Field activities were conducted at the Durango Lead Smelter site from April 8 through 12, 1996. The URS Operating Services, Inc. (UOS) field sampling team included Rachel Badger (Project Manager), Kim Edelman (Health and Safety Officer), Mark Rudolph (Sampler), and Eric Scott (Sampler).

SAMPLING ACTIVITIES

The sampling activities at the Durango Lead Smelter site included the collection of sixteen samples (Tables 1, 2, and 3). Specifically, five surface water samples, five sediment samples, three residential soil samples, and three Quality Assurance/Quality Control (QA/QC) samples were collected during the focused Site Inspection (SI). QA/QC samples included a trip blank (DL-SW-7), rinsate blank (DL-SW-6), and a duplicate surface water sample (DL-SW-5). The field samples were collected from the Animas River, Lightner Creek, and three residences located near the site. All samples were analyzed for total metals. Samples DL-SW/SE-1, DL-SW/SE-2, DL-SW-6, and LC-SW/SE-01 were also analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and pesticides/PCBs. Trip blank DL-SW-7 was analyzed for VOCs. All water samples, with the exception of the rinsate and trip blanks, were also analyzed for total organic carbon (TOC) and hardness. Samples were shipped via Federal Express on April 11, 1996, for organic and inorganic analysis through the U.S. Environmental Protection Agency Contract Laboratory Program (CLP) Routine Analytical Services (RAS) laboratories. The samples were sent to Industrial & Environmental Analysts of Whippany, New Jersey for organic analyses, and to SVL Analytical of Kellog, Idaho for inorganic analyses. Total organic carbon and hardness samples were privately contracted and sent via Federal Express to Hydrologic Laboratories of Brighton, Colorado for analysis.

Tables 1, 2, and 3 of this document contain field data and shipment information for all samples collected at the Durango Lead Smelter site during the SI. The Analytical Results Report (ARR) for the Durango Lead Smelter site will include photographs of sample locations and surrounding areas.

All surface water, sediment and soil sampling was conducted in Level D personal protective equipment. Level D personal protective equipment consisted of safety glasses, chemical resistant steel toed boots, work clothes, and latex gloves.

Equipment used for SI activities were decontaminated by first washing gross particulates off with a scrub brush, followed by a soap and water solution wash, a distilled water rinse, then sprayed with methanol

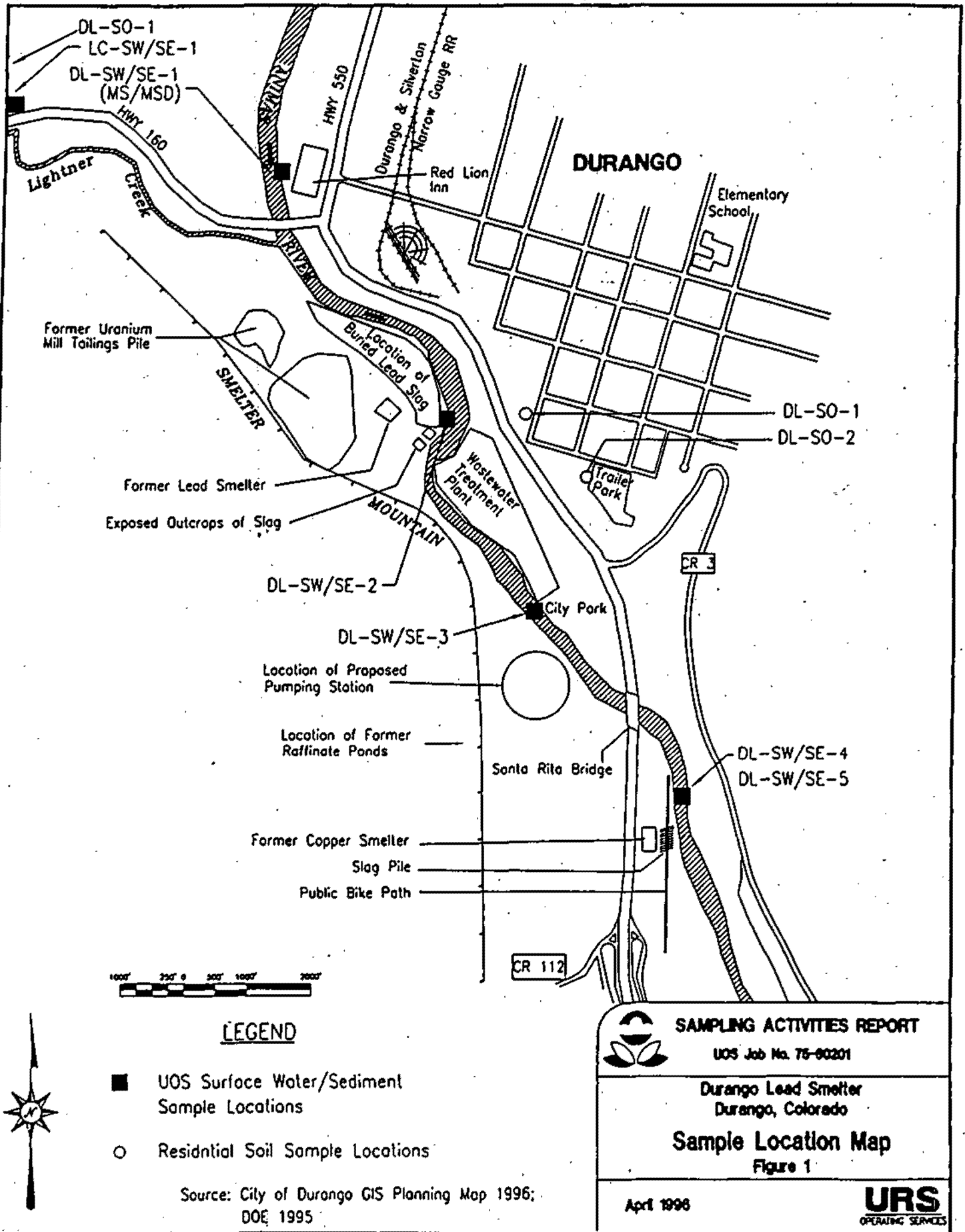


TABLE 1
 Surface Water Field Data
 Site: Durango Lead Smelter site, Durango, Colorado

Sample ID	Sampling		Shipping Date	Field Data			Comments
	Date	Time		pH	Conductivity $\mu\text{S}/\text{cm}^2$	Temperature $^{\circ}\text{F}$	
DL-SW-1	04-10-96	10:20	04-11-96	6.43	320	47.7	Background sample collected from the east bank of Animas River approximately 0.25 miles upstream from the Highway 160 bridge over the Animas River. MS/MSD was also collected at this location.
DL-SW-2	04-09-96	18:20	04-11-96	6.90	420	53.0	Collected from the west bank of Animas River at PPE. Slag from the lead smelter was observed to be entering the Animas River at this location.
DL-SW-3	04-09-96	17:20	04-11-96	6.73	5,040	56.1	Collected from the west bank of Animas River approximately 0.85 miles downstream from the PPE.
DL-SW-4	04-09-96	16:45	04-11-96	6.60	372	61.4	Collected from the west bank of Animas River approximately 1.5 miles downstream of the PPE.
DL-SW-5	04-09-96	16:45	04-11-96	6.60	372	61.4	Duplicate sample of DL-SW-4.
DL-SW-6	04-09-96	16:00	04-11-96	NA	NA	NA	Rinsate Blank.
DL-SW-7	04-09-96	10:15	04-11-96	NA	NA	NA	Trip Blank.
LC-SW-01	04-10-96	11:00	04-11-96	6.96	327	48.3	Background sample collected from the north side of Lightner Creek just before it passes under Highway 160.

TABLE 2
Sediment Field Data
Site: Durango Lead Smelter site, Durango, Colorado

Sample ID	Sampling		Shipping Date	Comments
	Date	Time		
DL-SE-1	04-10-96	10:20	04-11-96	Background sample collected from the east bank of Animas River approximately 0.25 miles upgradient from the Highway 160 bridge over the Animas River. MS/MSD was also collected at this location.
DL-SE-2	04-09-96	18:20	04-11-96	Collected from the west bank of Animas River. This was the location that the lead slag was observed to be entering the Animas River (PPE).
DL-SE-3	04-09-96	17:20	04-11-96	Collected from the west bank of Animas River approximately 0.85 miles downstream from the PPE.
DL-SE-4	04-09-96	16:45	04-11-96	Collected from the west bank of Animas River approximately 1.5 miles downstream of the PPE.
LC-SE-1	04-10-96	11:00	04-11-96	Collected from the north side of Lightner Creek just before it passes under Highway 160.

TABLE 3
Soil Field Data
Site: Durango Lead Smelter site, Durango, Colorado

Sample ID	Sampling		Shipping Date	Comments
	Date	Time		
DL-SO-1	04-10-96	11:35	04-11-96	Background sample collected from the back yard of the Potter residence approximately fifty feet behind the house and thirty feet north of Lightner Creek.
DL-SO-2	04-10-96	14:02	04-11-96	Sample collected from the westernmost side of the trailer park located southeast (downwind) across the Animas River and Highway 550 from the former smelter site. The sample was collected from the west side of the yard of residence #8.
DL-SO-3	04-10-96	13:55	04-11-96	Sample collected from the southwest corner of the property located at 277 E Third Avenue. This property is located west (downwind) of the former lead smelter across the Animas river and Highway 550.

75-60201
\\START\\Durango\\DUR-LEAD.SAR:ecs

TABLE 4
GPS Sample Locations
Site: Durango Lead Smelter site, Durango, Colorado

Sample ID	Latitude	Longitude
LC-SW/SE-1	N 37° 16' 15.33	W 107° 53' 42.78
DL-SW/SE-1	N 37° 16' 15.78	W 107° 53' 09.82
DL-SW/SE-2	N 37° 15' 52.55	W 107° 52' 53.02
DL-SW/SE-3	N 37° 15' 33.72	W 107° 52' 40.19
DL-SW/SE-4	N 37° 15' 27.08	W 107° 52' 34.11
DL-SW-5	N 37° 15' 27.08	W 107° 52' 34.11
DL-SO-1	N 37° 16' 14.57	W 107° 53' 46.64
DL-SO-2	N 37° 15' 46.43	W 107° 52' 39.74
DL-SO-3	N 37° 15' 58.97	W 107° 52' 47.75

1. Project Code 75.00201.00		Account Code		2. Region No. 8		Sampling Co. UOS		4. Date Shipped 4/11/96		Carrier Fedex		6. Preservative (Enter in Column D)		7. Sample Description (Enter in Column A)									
Regional Information				Sampler (Name) Rachel Badger				Air Mail Number 4231759276				1. HCl 2. HNO3 3. NaOH 4. H2SO4 5. K2Cr2O7 6. Ice only 7. Other (Specify) N. Not preserved		1. Surface Water 2. Ground Water 3. Leachate 4. Filtrate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)									
Non-Superfund Program				Sampler Signature Rachel S. Badger				5. Ship To SVC Analytical 1 Government Gulch P.O. Box 929 Kellogg, ID 83837 ATTN: Sample Custodian															
Site Name Durango Lead Smelter				3. Type of Activity																			
City, State Durango CO				Site Spill ID ZZ																			
CLP Sample Numbers (from labels)		A Enter # from Box 7		B Conc. Low Mod High		C Sample Type: Comp/Grab		D Preservative from Box 6		E - RAS Analysis		F Regional Specific Tracking Number or Tag Numbers		G Station Location Number		H Mo/Day/Year/Time Sample Collection		I Sampler Initials		J Corresp. CLP Org. Samp. No.		K Enter Appropriate Qualifier for Designated Field QC	
MHDD40		1		L		G		2		X		8-130491		DL-SW-1		4/10/96 1020		PSB		HQ931			
MHDD40		1		L		G		2		X		8-130490		DL-SW-1		4/10/96 1020		PSB		HQ931			
MHDD41		1		L		G		2		X		8-130493		DL-SW-2		4/9/96 1820		PSB		HQ933			
MHDD42		1		L		G		2		X		8-130494		DL-SW-3		4/9/96 1720		PSB		-			
MHDD43		1		L		G		2		X		8-130495		DL-SW-4		4/9/96 1649		PSB		-			
MHDD44		1		L		G		2		X		8-130496		DL-SW-5		4/9/96 1649		PSB		-		D	
MHDD45		1		L		G		2		X		8-130497		DL-SW-6		4/9/96 1600		PSB		HQ935		R	
MHDD46		1		L		G		2		X		8-130498		DL-SW-1		4/10/96 1100		PSB		HQ936			
MHDD47		5		L		G		10		X		8-130499		DL-SE-1		4/10/96 1020		PSB		HQ932			
MHDD47		5		L		G		10		X		8-130500		DL-SE-1		4/10/96 1020		PSB		HQ932			
Shipment for trace complete? (Y/N)				Page 1 of 2				Sample used for a spike and/or duplicate				Additional Sampler Signatures				Chain of Custody Seal Number							
								MHDD40, MHDD47															

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) Rachel S. Badger	Date / Time 4/11/96 1000	Received by: (Signature) Fedex	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used

DISTRIBUTION:

Green - Region Copy Pink - SMO Copy White - Lab Copy for return to Region Yellow - Lab Copy for Return to SMO

Split Samples ☐ Accepted (Signature)

☐ Declined

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

350080

& Chain of Custody Record
(For Inorganic CLP Analysis)

24569

1. Project Code 75.00201.00		Account Code		2. Region No. 8		Sampling Co. UOS		4. Date Shipped 4/11/96		Carrier Fedex		6. Preservative (Enter in Column D) 1. HCl 2. HNO3 3. NaOH 4. H2SO4 5. K2Cr2O7 6. Ice only 7. Other N. Not preserved		7. Sample Description (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Fluvial 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)					
Regional Information				Sampler (Name) Rachel Prodder				Airbill Number 4231759276											
Non-Superfund Program				Sampler Signature Rachel S. Prodder				5. Ship To SVI Analytical 1. Government gulch P.O. Box 929 Kellogg, ID 83837 ATTN: Sample Custodian											
Site Name Durango Lead Smelter				3. Type of Activity Lead <input checked="" type="checkbox"/> Nonmetal <input type="checkbox"/> RIFS <input type="checkbox"/> CLEM <input type="checkbox"/> SF <input type="checkbox"/> PA <input type="checkbox"/> RD <input type="checkbox"/> REMA <input type="checkbox"/> PRP <input type="checkbox"/> SS <input checked="" type="checkbox"/> RA <input type="checkbox"/> REM <input type="checkbox"/> ST <input type="checkbox"/> LSI <input type="checkbox"/> O&M <input type="checkbox"/> OIL <input type="checkbox"/> FED <input type="checkbox"/> NPLD <input type="checkbox"/> UST <input type="checkbox"/>															
City, State Durango, CO		Site Spill ID EE																	

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp/Grab	D Preservative from Box 6	E - RAS Analysis								F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Org. Samp. No.	K Enter Appropriate Qualifier for Designated Field QC B = Blank S = Spike D = Duplicate PE = Perform. Eval. -- = Mix & QC Sample
					Total	Dissolved	Cyanide	Nitrate	Nitrite	Fluoride	pH	Conductivity						
MHDD18	5	L	G	6	X								8-130623	DL-SG-2	4/4/96:1820	RSB	HQ934	
MHDD49	5	L	G	6	X								8-130621	DL-SG-3	4/9/96:1720	RSB	—	
MHDD50	5	L	G	6	X								8-130626	DL-SG-4	4/9/96:1645	RSB	—	
MHDD51	5	L	G	6	X								8-130628	LC-SE-1	4/10/96:1100	RSB	HQ938	
MHDD52	5	L	G	6	X								8-143201	DL-SO-1	4/11/96:1135	RSB	—	
MH13697	5	L	G	6	X								8-143202	DL-SO-2	4/10/96:1402	RSB	—	
MH13698	5	L	G	6	X								8-143203	DL-SO-3	4/10/96:1355	RSB	—	
1250																		

Shipment for Case complete? (Y/N)	Page 2 of 2	Sample used for a spike and/or duplicate	Additional Sampler Signatures	Chain of Custody Seal Number
--	---------------------------	--	-------------------------------	------------------------------

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature) Rachel S. Prodder	Date / Time 4/11/96 1600	Received by: (Signature) FedEx	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

EPA Form 9110-1 (Rev. 5-91) Replaces EPA Form (2075-6), previous edition which may be used
DISTRIBUTION:
Green - Region Copy Pink - SMO Copy White - Lab Copy for return to Region Yellow - Lab Copy for Return to SMO

Split Samples ☐ Accepted (Signature)
☐ Declined

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

1 350077

EPA		Contract Laboratory Program Sample Management Office PO Box 818 Alexandria, VA 22313 703-557-2490 FAX 557-2490		Organic Name Report & Chain of Custody Record (For Organic CLP Analysis)		SRS No. (if applicable)	Case No. <div style="font-size: 2em; font-weight: bold;">24569</div>
1. Project Code <div style="font-size: 1.5em; font-weight: bold;">DLS</div>		Account Code <div style="font-size: 1.5em; font-weight: bold;">60201</div>		2. Region No. Sampling Co. <div style="font-size: 1.5em; font-weight: bold;">VIII UOS</div>		4. Date Shipped Carrier <div style="font-size: 1.5em; font-weight: bold;">4/11/96 FedEx</div>	
Regional Information <div style="font-size: 1.5em; font-weight: bold;">—</div>		Sampler (Name) <div style="font-size: 1.5em; font-weight: bold;">Mark Rudolph</div>		Airbill Number <div style="font-size: 1.5em; font-weight: bold;">8148299876</div>		6. Preservative (Enter in Column D) 1. HCl 2. HNO ₃ 3. NaHSO ₄ 4. H ₂ SO ₄ 5. Other (Specify) 6. Ice only N. Not preserved	
Non-Superfund Program <div style="font-size: 1.5em; font-weight: bold;">—</div>		Sampler Signature <div style="font-size: 1.5em; font-weight: bold;">Mark Rudolph</div>		5. Ship To <div style="font-size: 1.5em; font-weight: bold;">QPD 428-8181 Industrial: Env. Analysts 628 Route 10 Whippany, NJ 07981</div>		7. Sample Description (Enter in Column A) 1. Surface Water 2. Ground Water 3. Leachate 4. Filtrate 5. Soil/Sediment 6. Oil (High only) 7. Waste (High only) 8. Other (Specify)	
Site Name <div style="font-size: 1.5em; font-weight: bold;">Durango Lead Smelter</div>		3. Type of Activity <div style="font-size: 1.5em; font-weight: bold;">SF PRP ST FED</div>		Removal <div style="font-size: 1.5em; font-weight: bold;">RIFS RD RA O&M NPLO</div>		ATTN:	
City, State <div style="font-size: 1.5em; font-weight: bold;">Durango, CO</div>		Site Spill ID <div style="font-size: 1.5em; font-weight: bold;">—</div>					

CLP Sample Numbers (from labels)	A Enter # from Box 7	B Conc. Low Med High	C Sample Type: Comp/Grab	D Preservative from Box 6	E RAS Analysis				F Regional Specific Tracking Number or Tag Numbers	G Station Location Number	H Mo/Day/Year/Time Sample Collection	I Sampler Initials	J Corresp. CLP Inorg. Samp. No.	K Enter Appropriate Qualifier for Designated Field OC D = Blank S = Spike D = Duplicate PE = Perform Eval. — = Not a OC Sample
					VOA	BNA	Posv PCB	High only ARO/TOX						
HQ931	1	L	G	6	X				8-143151,52,53,54	DL-SW-1	4/10/96 1020	ML	MHDD40	—
↓	1	L	G	6		X			8-143155,56,57	↓	↓	ML	↓	—
↓	1	L	G	6			X		8-143158,59,60	↓	↓	ML	↓	—
HQ932	5	L	G	6	X				8-143161,62	DL-SE-1		ML	MHDD43	—
↓	5	L	G	6		X			8-143163,64	↓	↓	ML	↓	—
↓	5	L	G	6			X		8-143165,66	↓	↓	ML	↓	—
HQ933	1	L	G	6	X				8-143167,68	DL-SW-2	4/9/96 1820	ML	MHDD41	—
↓	1	L	G	6		X			8-143169,70	↓	↓	ML	↓	—
↓	1	L	G	6			X		8-143171,72	↓	↓	ML	↓	—
MA									MA					MA

Shipment for Case complete? (Y/N) (Y)

Page 1 of 3

Sample used for a spike and/or duplicate

HQ931 and HQ932

Additional Sampler Signatures

—

Chain of Custody Seal Number

—

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
<div style="font-size: 1.5em; font-weight: bold;">Mark Rudolph</div>	<div style="font-size: 1.5em; font-weight: bold;">4/11/96 1700</div>	<div style="font-size: 1.5em; font-weight: bold;">Fed Ex</div>			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	Is custody seal intact? Y/N/none

Split Samples ☐ Accepted (Signature) ☐ Declined

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS

CHAIN OF CUSTODY RECORD

Split Samples ☐ Accepted (Signature)
☐ Declined

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS 0 349070

CHAIN OF CUSTODY RECORD

SEE REVERSE FOR ADDITIONAL STANDARD INSTRUCTIONS 0 349980

PROJECT NO/NAME:		SITE MANAGER:													
<i>Durango Pb</i>		<i>Rachel B. Lyr</i>													
SAMPLERS SIGNATURE:						Number of Containers	TOC	Hardness							REMARKS
STATION NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION										
LC-SW-1	4-10-96	11:00		✓	Surface Water	1	✓								Tag # 000712
LC-SW-1	4-10-96	11:00		✓	Surface Water	1		✓							Tag # 000711
DL-SW-1	4-10-96	10:20		✓	Surface Water	1		✓							Tag # 000702 / HSMASD
DL-SW-3	4-9-96	17:20		✓	Surface Water	1		✓							Tag # 000708
DL-SW-1	4-10-96	10:20		✓	Surface Water	1	✓								Tag # 000701
DL-SW-1	4-10-96	10:20		✓	Surface Water	1		✓							Tag # 000704
DL-SW-1	4-10-96	10:20		✓	Surface Water	1	✓								Tag # 000703
DL-SW-4	4-9-96	16:45		✓	Surface Water	1		✓							Tag # 000700
DL-SW-2	4-9-96	18:20		✓	Surface Water	1		✓							Tag # 000707
DL-SW-4	4-9-96	16:45		✓	Surface Water	1	✓								Tag # 000754
DL-SW-3	4-9-96	17:20		✓	Surface Water	1	✓								Tag # 000753
DL-SW-2	4-9-96	18:20		✓	Surface Water	1	✓								Tag # 000752
DL-SW-5	4-9-96	16:45		✓	Surface Water	1	✓								Tag # 000755
DL-SW-5	4-9-96	16:45		✓	Surface Water	1		✓							Tag # 000756
RELINQUISHED BY: (Signature)		DATE		TIME		RECEIVED BY: (Signature)		RELINQUISHED BY: (Signature)		DATE		TIME		RECEIVED BY: (Signature)	
<i>Kym Edelman</i>		4-11-96		16:00		<i>Red: Ex</i>									
RELINQUISHED BY: (Signature)		DATE		TIME		RECEIVED BY: (Signature)		RELINQUISHED BY: (Signature)		DATE		TIME		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		DATE		TIME		RECEIVED FOR LABORATORY BY: (Signature)		DATE		TIME		REMARKS:			
												AIRBILL NUMBER: 4231759254			

Durango Lead Smelter

SQLS FOR INORGANIC SOIL SAMPLES. $SQL = IDL \times (FINAL\ VOLUME / (SAMPLE\ WEIGHT))$

9 URS # and EPA # = DL-SO-02/MHBG97

 MATRIX= SOIL
 ANALYTES= Silver

INSTRUMENT DETECTION LIMIT (IDL)= 4.3 UG/L
 FINAL VOLUME= 200 ML
 SAMPLE WEIGHT= 1.00 GRAMS
 % SOLIDS= 0.87 (Convert to decimal)
 DILUTION FACTOR= 1

 SQL= 0.99 UG/G (PPM)

10 URS # and EPA # = DL-SO-03/MHBG98
 MATRIX= SOIL
 ANALYTES= Silver

INSTRUMENT DETECTION LIMIT (IDL)= 4.3 UG/L
 FINAL VOLUME= 200 ML
 SAMPLE WEIGHT= 1.00 GRAMS
 % SOLIDS= 0.90 (Convert to decimal)
 DILUTION FACTOR= 1

 SQL= 0.96 UG/G (PPM)

11 URS # and EPA # = DL-SO-03/MHBG98
 MATRIX= SOIL
 ANALYTES= Manganese

INSTRUMENT DETECTION LIMIT (IDL)= 2 UG/L
 FINAL VOLUME= 200 ML
 SAMPLE WEIGHT= 1.00 GRAMS
 % SOLIDS= 0.90 (Convert to decimal)
 DILUTION FACTOR= 1

 SQL= 0.44 UG/G (PPM)

Durango Lead Smelter

SQLS FOR INORGANIC SOIL SAMPLES. $SQL = IDL \times (FINAL\ VOLUME / (SAMPLE\ WEIGHT))$

5 URS # and EPA # = DL-SE-04/MHDD48
 MATRIX= SOIL

 ANALYTES= Zinc

INSTRUMENT DETECTION LIMIT (IDL)= 3.6 UG/L
 FINAL VOLUME= 200 ML
 SAMPLE WEIGHT= 1.00 GRAMS
 % SOLIDS= 0.81 (Convert to decimal)
 DILUTION FACTOR= 2

 SQL= 1.78 UG/G (PPM)

6 URS # and EPA # = DL-SO-03/MHBG98
 MATRIX= SOIL
 ANALYTES= Copper

INSTRUMENT DETECTION LIMIT (IDL)= 2.9 UG/L
 FINAL VOLUME= 200 ML
 SAMPLE WEIGHT= 1.00 GRAMS
 % SOLIDS= 0.90 (Convert to decimal)
 DILUTION FACTOR= 1

 SQL= 0.64 UG/G (PPM)

7 URS # and EPA # = DL-SO-02/MHBG97
 MATRIX= SOIL
 ANALYTES= Lead

INSTRUMENT DETECTION LIMIT (IDL)= 0.5 UG/L
 FINAL VOLUME= 200 ML
 SAMPLE WEIGHT= 1.00 GRAMS
 % SOLIDS= 0.87 (Convert to decimal)
 DILUTION FACTOR= 20

 SQL= 2.30 UG/G (PPM)

8 URS # and EPA # = DL-SO-03/MHBG98
 MATRIX= SOIL
 ANALYTES= Lead

INSTRUMENT DETECTION LIMIT (IDL)= 0.5 UG/L
 FINAL VOLUME= 200 ML
 SAMPLE WEIGHT= 1.00 GRAMS
 % SOLIDS= 0.90 (Convert to decimal)
 DILUTION FACTOR= 80

 SQL= 8.89 UG/G (PPM)

Durango Lead Smelter

SQLS FOR INORGANIC SOIL SAMPLES. $SQL = IDL \times (FINAL\ VOLUME / (SAMPLE\ WEIGHT))$

1 URS # and EPA # = DL-SE-02/MHDD48
 MATRIX= SOIL
 ANALYTES= Cadmium

INSTRUMENT DETECTION LIMIT (IDL)= 4.7 UG/L
 FINAL VOLUME= 200 ML
 SAMPLE WEIGHT= 1.00 GRAMS
 % SOLIDS= 0.81 (Convert to decimal)
 DILUTION FACTOR= 1

SQL= 1.16 UG/G (PPM)

2 URS # and EPA # = DL-SE-02/MHDD48
 MATRIX= SOIL
 ANALYTES= Mercury

INSTRUMENT DETECTION LIMIT (IDL)= 0.1 UG/L
 FINAL VOLUME= 100 ML
 SAMPLE WEIGHT= 0.20 GRAMS
 % SOLIDS= 0.81 (Convert to decimal)
 DILUTION FACTOR= 1

SQL= 0.06 UG/G (PPM)

3 URS # and EPA # = DL-SE-04/MHDD50
 MATRIX= SOIL
 ANALYTES= Mercury

INSTRUMENT DETECTION LIMIT (IDL)= 0.1 UG/L
 FINAL VOLUME= 100 ML
 SAMPLE WEIGHT= 0.20 GRAMS
 % SOLIDS= 0.73 (Convert to decimal)
 DILUTION FACTOR= 1

SQL= 0.07 UG/G (PPM)

4 URS # and EPA # = DL-SE-02/MHDD48
 MATRIX= SOIL
 ANALYTES= Vanadium

INSTRUMENT DETECTION LIMIT (IDL)= 2 UG/L
 FINAL VOLUME= 200 ML
 SAMPLE WEIGHT= 1.00 GRAMS
 % SOLIDS= 0.81 (Convert to decimal)
 DILUTION FACTOR= 1

SQL= 0.49 UG/G (PPM)

Durango Lead Smelter

SQLS FOR INORGANIC WATER SAMPLES. SQL = CRDL X DILUTION FACTOR

1 URS # and EPA # =DL-SW-03/MHDD42; DL-SW-05/MHDD44
 MATRIX=WATER
 ANALYTES=Potassium

 CRDL= 5000 UG/L
 DILUTION FACTOR= 1.00

 SQL= 5000.00 UG/L (PPB)

2 URS # and EPA # =DL-SW-03/MHDD42; DL-SW-05/MHDD44
 MATRIX=WATER
 ANALYTES=Vanadium

 CRDL= 50 UG/L
 DILUTION FACTOR= 1.00

 SQL= 50.00 UG/L (PPB)

START

Superfund Technical Assessment and Response
Team - Region VIII



United States
Environmental Protection Agency

Contract No. 68-W5-0031

SITE INSPECTION ANALYTICAL RESULTS REPORT

DURANGO LEAD SMELTER
Durango, Colorado

APPENDIX D

TDD No. 9602-0001

NOVEMBER 4, 1996



URS

OPERATING SERVICES, INC.

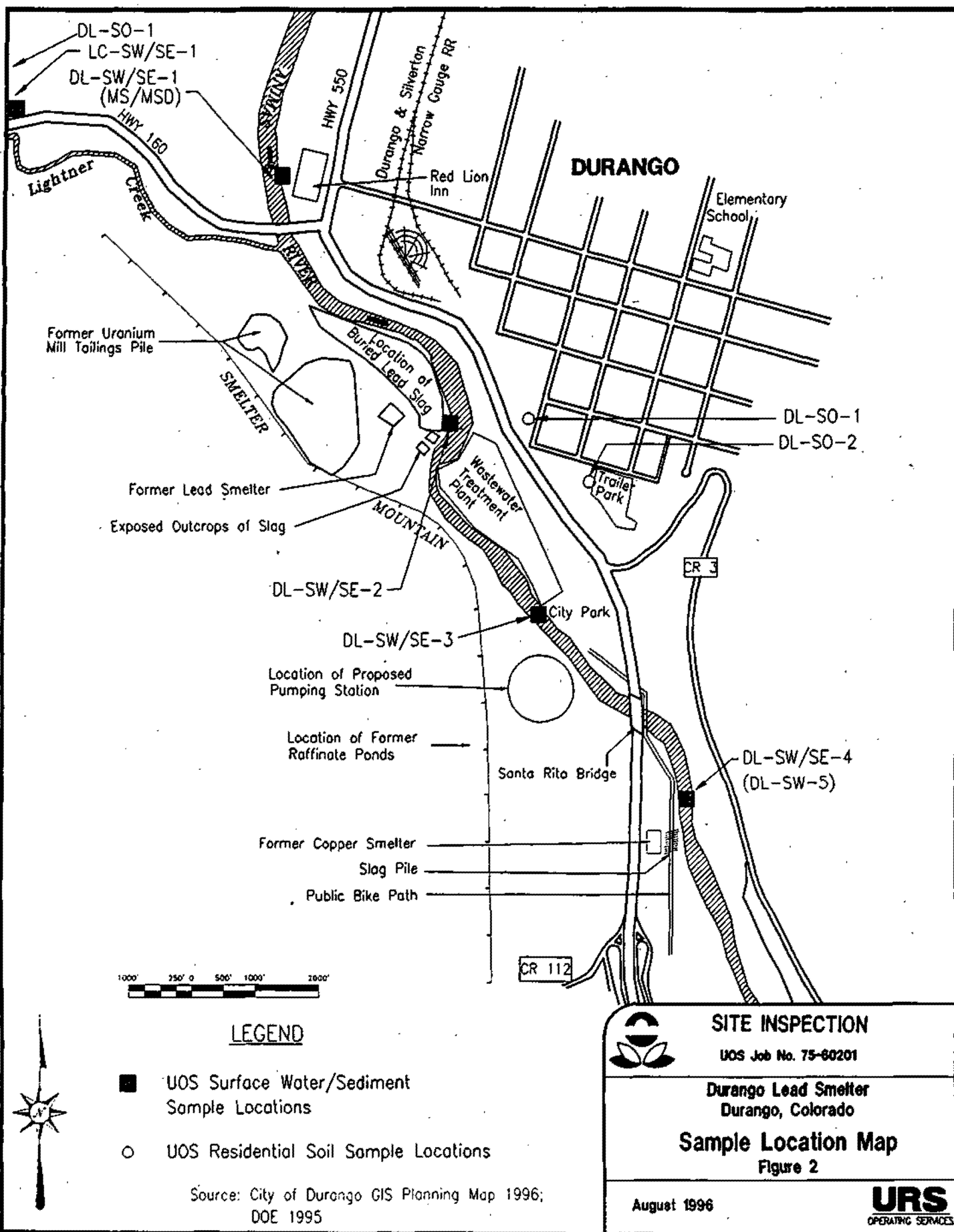


TABLE 1
Sample Locations and Rationale

Matrix	Sample #	Location	Rationale
Surface Water Samples	DL-SW-1 (MS/MSD)	Collected from the east bank of the Animas River, approximately 0.25 miles upgradient of the site PPE.	Document background conditions along the Animas River. The MS/MSD collected to test the precision of lab analytical methods.
	DL-SW-2	Collected from the west bank of the Animas River at the site PPE.	Test for potential site impacts to Animas River wetlands and fishery.
	DL-SW-3	Collected from the west bank of the Animas River approximately 0.85 miles downstream of the PPE.	Test for extent of site impacts to Animas River wetlands and fishery.
	DL-SW-4	Collected from the Animas River approximately one and one-half miles downstream from the PPE.	Test for extent of site impacts to Animas River wetlands and fishery.
	LC-SW-1	Background sample collected from Lightner Creek, north of Highway 160 bridge.	Document background conditions on Lightner Creek before it discharges into the Animas River.
Sediment Samples	DL-SE-1 (MS/MSD)	Collected from the east bank of the Animas River approximately 0.25 miles upgradient of the site PPE.	Document background conditions on the Animas River. The MS/MSD collected to test the precision of lab analytical methods.
	DL-SE-2	Collected from the west bank of the Animas River at the site PPE.	Test for potential site impacts to Animas River wetlands and fishery.
	DL-SE-3	Collected from the west bank of the Animas River approximately 0.85 miles downstream of the PPE.	Test for extent of site impacts to Animas River wetlands and fishery.
	DL-SE-4	Collected from the Animas River approximately one and one-half miles downstream of the PPE.	Test for extent of site impacts to Animas River wetlands and fishery.
	LC-SE-1	Background sample collected from Lightner Creek, north of Highway 160 bridge.	Document background conditions on Lightner Creek before it discharges into the Animas River.

TABLE 1
Sample Locations and Rationale

Matrix	Sample #	Location	Rationale
Soil Samples	DL-SO-1	Background sample collected from the back yard of the Potter residence, approximately thirty feet north of Lightner Creek in the Smelter Mountain Canyon.	Characterize background conditions in surrounding residential areas. Sample is a biased grab background sample.
	DL-SO-2	Sample collected from the westernmost side of the trailer park located southeast (downwind) across the Animas River and Highway 550 from the smelter site.	Characterize contaminants in residential properties to test for soil exposure threat to residents.
	DL-SO-3	Sample collected from the southwest corner of the property located at 227 E. 3rd Ave. Property located west (downwind) of the former lead smelter across the Animas River and Highway 550.	Characterize contaminants in residential properties to test for soil exposure threat to residents.
QA/QC Samples	DL-SW-5	Duplicate of surface water sample DL-SW-4.	Quality Assurance sample to document the ability to collect collocated samples in the field.
	DL-SW-6	Rinsate Blank.	Document thoroughness of decontamination process.
	DL-SW-7	Trip Blank.	Document contamination introduced during sample handling and shipping. Volatile organics only.

TABLE 2
Surface Water - Organic Sample Results
Concentrations in $\mu\text{g/l}$ (ppb)

UOS Sample ID#: Case #: EPA ID #: Location:	DL-SW-1 24569 HQ931 Collected from Animas River 0.25 miles upgradient of PPE	LC-SW-1 24569 HQ936 Collected from Lightner Creek upgradient of Animas River confluence	DL-SW-2 24569 HQ933 Collected from Animas River at PPE	DL-SW-7 24569 HQ937 VOA Trip Blank
Volatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
TICs	-	-	-	-
Semivolatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	
TICs	5	7	1	NA
Pesticides	Dilution: 1	Dilution: 1	Dilution: 1	
None	-	-	-	NA

- The analyte was not detected (qualified by laboratory software).
 TICs Tentatively Identified Compounds.

TABLE 3
Sediment - Organic Sample Results
Concentrations in ppb

UOS Sample ID#: Case #: EPA ID #: Location: Units:	DL-SE-1 24569 HQ932 Sediment collected from Animas River 0.25 miles upgradient of PPE µg/kg	LC-SE-1 24569 HQ938 Sediment collected from Lightner Creek upgradient of Animas River confluence µg/kg	DL-SE-2 24569 HQ934 Sediment collected from Animas River at PPE µg/kg	DL-SW-6 24569 HQ935 Aqueous QA/QC rinse sample µg/l
Volatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	Dilution: 1
TICs	-	-	-	-
Semivolatile Organic Compounds	Dilution: 1	Dilution: 1	Dilution: 1	
Phenanthrene	[44]	[72]	-	-
Fluoranthene	[86]	-	-	-
Chrysene	[54]	-	-	-
Bis(2-Ethylhexyl)Phthalate	[44]	-	-	-
Benzo(b)fluoranthene	[58]	-	-	-
TICs	5	6	4	2
Pesticides	Dilution: 1	Dilution: 1	Dilution: 1	
delta-BHC	-	[2]	-	-

[] The associated numerical value was detected below the CRQL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.
 - The analyte was not detected (qualified by laboratory software).
 TICs Tentatively Identified Compounds.

TABLE 4
Surface Water - Inorganic Sample Results
Concentrations in µg/l (ppb)

UOS Sample ID: Case #: EPA ID #: Location:	DL-SW-1 24569 MHDD40 Collected from Animas River 0.25 miles upgradient of PPE	LC-SW-1 24569 MHDD46 Collected from Lightner Creek upgradient of Animas River confluence	DL-SW-2 24569 MHDD41 Collected from Animas River at PPE	DL-SW-3 24569 MHDD42 Collected from Animas River 0.85 miles downstream of PPE	DL-SW-4 24569 MHDD43 Collected from Animas River 1.5 mile downstream of PPE	DL-SW-5 24569 MHDD44 Duplicate sample of DL-SW-4
Aluminum	Al 2,390	4,060	1,990	1,380	1,810	1,860
Antimony	Sb 45.5 U	45.5 U	45.5 U	45.5 U	45.5 U	45.5 U
Arsenic	As [1.3] J	0.90 J	0.90 J	0.90 J	[1.2] J	0.90 J
Barium	Ba [61.6]	[143]	[64.4]	[57.0]	[60.3]	[62.6]
Beryllium	Be 0.20 U	[0.24]	0.20 U	0.20 U	0.20 U	0.20 U
Cadmium	Cd 4.7 U	4.7 U	4.7 U	4.7 U	4.7 U	4.7 U
Calcium	Ca 53,800	73,800	61,300	61,300	60,500	61,600
Chromium	Cr 1.6 UJ	1.6 UJ	1.6 UJ	1.6 UJ	1.6 U	1.6 UJ
Cobalt	Co 3.9 U	3.9 U	3.9 U	4.8 U	3.9 U	3.9 U
Copper	Cu 28.3	[4.1]	[20.4]	[15.1]	[18.5]	[20.0]
Iron	Fe 4,420	5,210	2,920	2,140	2,690	2,780
Lead	Pb 45.4 J	4.5 UJ	31.8 J	29.5 J	24.1 J	53.8 J
Magnesium	Mg 7,190	17,900	8,960	9,090	8,490	8,670
Manganese	Mn 587	94.1	422	352	447	450
Mercury	Hg 0.17 U	0.15 U	0.15 U	0.11 U	0.13 U	0.15 U
Nickel	Ni 12.4 UJ	12.4 UJ	12.4 UJ	12.4 UJ	12.4 U	12.4 UJ
Potassium	K 2,160 U	[2,730]	2,240 U	[2,750] (5,000)	2,440 U	[2,700] (5,000)
Selenium	Se 0.90 J	0.90 J	0.90 J	0.90 J	0.90 J	0.90 J
Silver	Ag 4.3 U	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U
Sodium	Na 9,070	8,400	10,100	12,400	10,600	11,000
Thallium	Tl 0.90 J	0.90 J	0.90 J	0.90 J	0.90 J	0.90 J
Vanadium	V 2.0 UJ	[9.7] J	2.0 UJ	[2.1] J (50)	2.0 UJ	[2.5] J (50)
Zinc	Zn 341	27.9	257	208	242	331

J/UJ (Validator Qualifier) The associated numerical value is an estimated quantity because quality control criteria were not met. Compound was not detected when denoted with a UJ qualifier.
 U (Laboratory Qualifier) The analyte was not detected at reported concentration.
 [] The associated numerical value was detected below the CRDL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.
 () Sample Quantitation Limit (SQL).

TABLE 5
Sediment - Inorganic Sample Results
Concentrations in ppm

UOS Sample ID: Case #: EPA ID #: Location:	DL-SE-1 24569 MHDD47 Sediment sample collected from Animas River 0.25 miles upgradient of PPE	LC-SE-1 24569 MHDD51 Sediment sample collected from Lightner Creek upgradient of Animas River confluence	DL-SE-2 24569 MHDD48 Sediment sample collected from Animas River at PPE	DL-SE-3 24569 MHDD49 Sediment sample collected 0.85 miles downstream of PPE	DL-SE-4 24569 MHDD50 Sediment sample collected 1.5 miles downstream of PPE	DL-SW-6 24569 MHDD45 QA/QC Aqueous Rinse Blank
Analyte/Abbreviation	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/l
Aluminum Al	8,210	6,350	7,070	6,030	6,300	[0.0374]
Antimony Sb	12.9 U	13.7 U	11.2 U	12.9 U	12.4 U	0.0455 U
Arsenic As	11.2 J	6.6 J	10.7 J	8.5 J	9.2 J	0.0009 J
Barium Ba	155	226	281	112	134	0.00057 U
Beryllium Be	[0.53]	[0.55]	0.33 U	0.37 U	[0.42]	0.0002 U
Cadmium Cd	4.9	1.6	★ 498 (1.16)	3.6	4.0	0.0047 U
Calcium Ca	4,070	75,000	11,600	6,520	9,610	0.0403 U
Chromium Cr	6.5 J	6.2 J	6.0 J	4.2 J	5.0 J	0.0016 U
Cobalt Co	[11.7]	[7.1]	13.3	[7.8]	[9.7]	0.0039 U
Copper Cu	130	22.4	284	125	142	0.0029 U
Iron Fe	20,000	19,400	24,300	15,900	17,200	0.0087 UJ
Lead Pb	334	21.1	311	226	260	0.0012 UJ
Magnesium Mg	4,160	9,580	4,250	3,440	3,830	0.0381 U
Manganese Mn	2,470	197	3,060	1,570	1,800	0.002 U
Mercury Hg	0.07 U	[0.08]	[0.07] (0.06)	0.07 U	[0.07] (0.07)	0.00015 U
Nickel Ni	[6.6] J	16.7 J	[9.3] J	[4.2] J	[6.9] J	0.0124 U
Potassium K	1,460	2,080	1,500	[1,020]	[1,080]	0.262 U
Selenium Se	0.25 J	[0.92] J	0.22 J	0.25 J	0.25 J	0.0009 J
Silver Ag	3.0	1.3 U	8.7	[1.9]	3.1	[0.0047]
Sodium Na	[81.1]	[126]	[95.7]	[111]	[84.5]	0.111 U
Thallium Tl	0.25 J	0.27 J	0.22 J	0.25 J	0.25 J	0.0009 J
Vanadium V	21.8	24.7	★ 357 (0.49)	16.2	18.3	0.002 U
Zinc Zn	1,000	76.6	★ 28,500 (1.78)	813	972	0.0036 U

- J/UJ (Validator Qualifier) The associated numerical value is an estimated quantity because quality control criteria were not met. Compound was not detected when denoted with a UJ qualifier.
 U (Laboratory Qualifier) The analyte was not detected at reported concentration.
 [] The associated numerical value was detected below the CRDL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.
 () Sample Quantitation Limit (SQL).
 ★ Sample values are \geq to the SQL, $\geq 3x$ background concentrations, and $\geq 5x$ all blank concentrations.

TABLE 6
Residential Soil - Inorganic Sample Results
Concentrations in ppm

UOS Sample ID: Case #: EPA ID #: Location:	DL-SO-1 24569 MHDD52 Background sample collected from residence, near Lightner Creek	DL-SO-2 24569 MHBG97 Soil sample collected from trailer park SE from site (downwind)	DL-SO-3 24569 MHBG98 Soil sample collected from residence west of site (downwind)	DL-SW-6 24569 MHDD45 QA/QC Aqueous Rinsate Blank
Analyte/Abbreviation	mg/kg	mg/kg	mg/kg	mg/l
Aluminum Al	8,210	11,700	19,100	[0.0374]
Antimony Sb	11.6 U	10.4 U	10.1 U	0.0455 U
Arsenic As	8.2 J	21.4 J	13.1 J	0.0009 J
Barium Ba	180	219	224	0.00057 U
Beryllium Be	[0.54]	[0.63]	[0.79]	0.0002 U
Cadmium Cd	1.5	3.3	2.7	0.0047 U
Calcium Ca	21,700	8,850	11,400	0.0403 U
Chromium Cr	8.7 J	11.9	13.8	0.0016 U
Cobalt Co	[6.0]	[7.7]	11.8	0.0039 U
Copper Cu	26.9	47.1	★ 91.5 (0.64)	0.0029 U
Iron Fe	16,600	17,200	23,900	0.0087 UJ
Lead Pb	52.8	★ 181 (2.30)	★ 302 (8.89)	0.0012 UJ
Magnesium Mg	5,680	3,950	6,010	0.0381 U
Manganese Mn	268	669	★ 1,310 (0.44)	0.002 U
Mercury Hg	0.34	0.22	0.12	0.00015 U
Nickel Ni	14.4 J	10.4 J	15.1	0.0124 U
Potassium K	2,480	2,930	2,710	0.262 U
Selenium Se	[0.40] J	[0.25] J	[0.26] J	0.0009 J
Silver Ag	1.1 U	★ [1.7] (0.99)	★ [2.1] (0.96)	[0.0047]
Sodium Na	[118]	[80.3]	[250]	0.111 U
Thallium Tl	0.23 J	0.21 J	0.20 J	0.0009 J
Vanadium V	24.4	40.8	31.6	0.002 U
Zinc Zn	143	211	402	0.0036 U

- J/UJ (Validator Qualifier) The associated numerical value is an estimated quantity because quality control criteria were not met. Compound was not detected when denoted with a UJ qualifier. Sample data was qualified with a UJ for one or more of the following reasons: low correlation coefficient, negative blank results, low matrix spike %R, and/or low analytical spike %R. Refer to data validation report for more detailed description of each elements qualifications.
- U (Laboratory Qualifier) The analyte was not detected at reported concentration.
- [] The associated numerical value was detected below the CRDL, but greater than the method detection limit and is therefore an estimate (qualified by laboratory software). Presence of the compound is reliable.
- () Sample Quantitation Limit (SQL).
- ★ Sample values are \geq to the SQL, $\geq 3x$ background concentrations, and $\geq 5x$ all blank concentrations.



300 UNION BOULEVARD, SUITE 510, LAKEWOOD, COLORADO 80228 U.S.A.

TECHLAW INC.

PHONE: (303) 763-7188 FAX: (303) 763-4896

June 12, 1996

Ms. Lori Raschke
URS Operating Services, Inc.
1099 18th Street, Suite 710
Denver, CO 80202-8296

RE: Transmittal of Data Validation Reports

Dear Ms. Raschke:

Please find the enclosed Validation Report MHBG97 for metals analysis by CLP methodology for the Durango Lead Project.

The report was prepared in accordance to USEPA Region VIII validation formats and requirements.

If you have any questions regarding this report, please contact me at (303) 763-8881.

Yours sincerely,
TechLaw, Inc.

Robert J. Thielke
Staff Consultant

enclosure

IF: 252-001

COPY

REGION VIII
SUMMARY OF CLP DATA QUALITY ASSURANCE REVIEW
INORGANIC METALS

Case/SAS No.	Site Name		Operable Unit
24569	Durango Lead Smelter		
RPM Name			
Pat Smith			
Contractor Laboratory	Contract No.	SDG No.	Laboratory TPO/Region
SVL Analytical, Inc.	68-D5-0138	MHBG97	/VIII

Data Reviewer Lyle Ryman
Review Completion Date June 7, 1996

Sample ID	Sample Location	Matrix	Analysis
MHBG97	DL-SO-2	Soil	CLP Metals
MHBG98	DL-SO-3		
MHDD40	DL-SW-1	Water	CLP Metals
MHDD41	DL-SW-2		
MHDD42	DL-SW-3		
MHDD43	DL-SW-4		
MHDD44	DL-SW-5		
MHDD45	DL-SW-6		
MHDD46	LC-SW-1		
MHDD47	DL-SE-1	Soil	CLP Metals
MHDD48	DL-SE-2		
MHDD49	DL-SE-3		
MHDD50	DL-SE-4		
MHDD51	LC-SE-1		
MHDD52	DL-SO-1		



DATA QUALITY STATEMENT*

☐ Data are ACCEPTABLE according to EPA Functional Guidelines with no qualifiers (flags) added by the reviewer.

☐ Data are UNACCEPTABLE according to EPA Functional Guidelines.

☒ Data are acceptable with QUALIFICATIONS noted in review.

Telephone/Communication Logs Enclosed? Yes ☐ No ☒

TPO Attention Required? Yes ☐ No ☒ If yes, list the items that require attention:

* Please see Data Qualifier Definitions attached to the end of this report.



INORGANIC RAS DATA QUALITY ASSURANCE REVIEW

REVIEW NARRATIVE SUMMARY

This data package was reviewed according to the document "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994.

Case 24569, SDG MHBG97 consisted of fifteen (15) samples for CLP RAS inorganic analyses.

The following tables list all data qualifiers added to the data.

Sample Number	Element	Qualifier	Reason for Qualification	Review Section		
All samples	Thallium	UJ	Low correlation coefficient	III		
MHDD45	Barium	U	Positive blank contamination	IV		
MHDD48, MHDD49	Beryllium					
MHDD45	Calcium					
MHDD42	Cobalt					
MHDD45	Magnesium					
MHDD45, MHDD46	Lead					
MHDD40, MHDD41, MHDD42, MHDD43, MHDD44, MHDD45, MHDD46	Mercury					
MHDD40, MHDD41, MHDD43	Potassium					
MHDD45	Sodium					
MHDD40, MHDD41, MHDD42, MHDD44, MHDD46	Chromium	UJ	Negative blank results	IV		
MHDD45	Iron					
MHDD40, MHDD41, MHDD42, MHDD44, MHDD46	Nickel					
MHDD40, MHDD41, MHDD43	Vanadium					
MHBG97, MHDD47, MHDD48, MHDD49, MHDD50, MHDD51, MHDD52	Nickel	J				
MHDD47, MHDD48, MHDD49, MHDD50, MHDD51, MHDD52	Chromium					
MHDD42, MHDD44, MHDD46	Vanadium					



Sample Number	Element	Qualifier	Reason for Qualification	Review Section
All samples	Arsenic	J/UJ	Low matrix spike %R	VIII
MHDD40, MHDD41, MHDD42, MHDD43, MHDD44, MHDD45, MHDD46	Lead	J		
All samples	Selenium	J/UJ		
MHDD40, MHDD41, MHDD42, MHDD43, MHDD44, MHDD46, MHDD47	Selenium	UJ	Low analytical spike %R	XI
MHDD51, MHBG97, MHBG98	Selenium	J		
MHBG98, MHDD51	Arsenic	J	Low correlation coefficient MSA	XI



INORGANIC RAS METALS DATA QUALITY ASSURANCE REVIEW

SOW Number ILMO4.0
Revision _____

RAS Inorganic Metals Data Completeness Checklist

P Cover Sheet/Transmittal Letter (one per data package shipment)

P Case Narrative

P Forms

P Cover Page

P Inorganic Analysis Data Sheets (Form 1)

P Initial and Continuing Calibration Verification Results (Form 2A)

P CRDL Standard for AA and ICP (Form 2B)

P Blank Analysis Results (Form 3)

P ICP Interference Check Sample Results (Form 4)

P Spiked Sample Recovery Results (Form 5A)

P Post Digest Spiked Sample Recovery Results (Form 5B)

P Duplicate Sample Results (Form 6)

P Laboratory Control Sample Results (Form 7)

P Standard Addition Results (Form 8)

P ICP Serial Dilution Results (Form 9)

P Instrument Detection Limits (Form 10)

P ICP Interelement Correction Factors (Form 11A, 11B)

P ICP Linear Ranges (Form 12)

P Preparation Log (Form 13)

P Analysis Run Log (Form 14)

P Full Inorganics Complete SDG File (CSF) Inventory Sheet (Form DC-2)

P Raw Data

P ICP Raw Data

NA Flame AA Raw Data

P Graphite Furnace AA Raw Data

P Mercury Raw Data

NA Cyanide Raw Data

P Sample Digestion Logs

P ICP/Flame Digestion Logs

P Graphite Furnace Digestion Logs

P Mercury Digestion Logs

NA Cyanide Distillation Logs

P Standard Preparation Logs

P Standard Source and Expiration Dates (expiration dates not included)

P Percent Solids Calculations (Solids only)

P COC Records

P Sample Description

KEY:

P = Provided in original data package, as required by the SOW

R = Provided as Resubmission

NP = Not provided in original data package or as resubmission

NR = Not required under the SOW

NA = Not applicable to this data package or analysis



INORGANIC RAS METALS DATA QUALITY ASSURANCE REVIEW

I. DELIVERABLES

All deliverables were present as specified in the statement of work.

Yes ☒ No ☐

Comments:

None.

II. HOLDING TIMES

All CLP-SOW holding times were met.

Yes ☒ No ☐

Comments:

None.

All 40 CFR Part 136 technical holding times were met.

Yes ☒ No ☐

Comments:

None.

III. INSTRUMENT CALIBRATIONS: INITIAL AND CONTINUING STANDARDS

Initial instrument calibrations were performed according to SOW requirements and met the specified control limits listed in the functional guidelines.

Yes ☐ No ☒

The instruments were calibrated daily and each time they were set up.

Yes ☒ No ☐

The instruments were calibrated using one blank and the appropriate number of standards.

Yes ☒ No ☐



Comments:

The thallium analysis initial calibration correlation coefficient was calculated to be less than 0.995.

Analyte	Correlation Coefficient	Associated Sample	Qualifier
Thallium	0.9887	MHBG97, MHBG98, MHDD40, MHDD41, MHDD42, MHDD43, MHDD44, MHDD45, MHDD46, MHDD47, MHDD48, MHDD49, MHDD50, MHDD51, MHDD52	UJ

IIIa. Initial and continuing calibration verification standards (ICV and CCV, respectively) were performed according to SOW requirements and met specified control limits listed in the functional guidelines.

Yes _____ No X

The calibration verification results were within 90-110% recovery (80-120% for mercury and 85-115% for cyanide).

Yes _____ No X

The continuing calibrations standards and blanks were run at 10% frequency or every 10 samples.

Yes X No _____

Comments:

None.

Analyte	ICV/CCV	% R	Associated Sample	Qualifier
Sodium	CCV6	113	None	NA



IIIb. The CRDL standards for ICP and/or AA met contract requirements.

Yes X No _____

ICP Analysis: Standards (CRI) at 2 times the CRDL or the IDL (whichever is greater) were analyzed at the beginning and the end of each sample run, or at a minimum of twice per eight hour shift, whichever was more frequent.

Note: A CRI analysis is not required for Al, Ba, Ca, Fe, Mg, Na, and K.

Yes X No _____

GFAA Analysis: Standards (CRA) were analyzed at the beginning of each sample run, or at a minimum of once per eight hour shift, whichever was more frequent.

Yes X No _____

The CRI and/or the CRA were analyzed after the ICV.

Yes X No _____

Comments:

None.

IV. LABORATORY/PREPARATION BLANK ANALYSIS RESULTS

The initial and continuing calibration blank (ICB and CCB, respectively) analyses were performed according to SOW requirements and results met specified control limits.

Yes X No _____

Comments:

None.

A laboratory preparation blank analysis was performed according to SOW requirements and results met specified control limits.

Yes X No _____

Comments:

None.



Contamination was detected in the preparation and/or calibration blanks as summarized in the following table:

Blank ID	Analyte	Concentration Found in the Blank (ug/L)	CRDL (ug/L)	± Blank Conc. (ug/L)	Sample Affected	Qualifier/Adjustment
CCB3	Barium	0.7	200	3.5	MHDD45	U
CCB1	Calcium	24.2	5000	121		
CCB3	Magnesium	37.2	5000	186		
ICB	Lead	1.7	3	8.5		
CCB3	Beryllium	0.3	5	1.5	MHDD48, MHDD49	U
PBS	Beryllium	-0.2138	5	-1.1	None	NA
ICB	Chromium	-6.9	10	-34.5	MHDD40, MHDD41, MHDD42, MHDD44, MHDD46	UJ
ICB	Chromium	-6.9	10	-34.5	MHDD47, MHDD48, MHDD49, MHDD50, MHDD51, MHDD52	J
CCB3	Cobalt	4.3	50	21.5	MHDD42	U
ICB	Iron	-15.4	100	-77.0	MHDD45	UJ
CCB2	Mercury	0.2	0.2	1.0	MHDD40, MHDD41, MHDD42, MHDD43, MHDD44, MHDD45, MHDD46	U
PBW	Nickel	-15.3	40	-76.5	MHDD40, MHDD41, MHDD42, MHDD44, MHDD46	UJ
CCB6	Nickel	-13.2	40	-66.0	MHBG97, MHDD47, MHDD48, MHDD49, MHDD50, MHDD51, MHDD52	J
CCB4	Potassium	537.3	5000	2690	MHDD40, MHDD41, MHDD43	U
PBW	Sodium	50.4	5000	252	MHDD45	U
CCB6	Vanadium	-2.6	50	-13.0	MHDD40, MHDD41, MHDD43	UJ
CCB6	Vanadium	-2.6	50	-13.0	MHDD42, MHDD44, MHDD46	J
ICB	Lead	1.7	3	8.5	MHDD46	U
CCB1	Arsenic	1.3	10	6.5	None	NA
PB5	Lead	0.81	3	4.1		
CCB3	Lead	1.8	3	9.0		
CCB2	Lead	1.5	3	7.5		

V. ICP INTERFERENCE CHECK SAMPLE

The ICP interference check sample (ICS) was run twice per eight hour shift and/or at the beginning and end of each sample set analysis sequence (whichever is more frequent), with the interferences properly corrected for (as defined in the SOW).

Yes X No _____

Comments:

None.

VI. LABORATORY CONTROL SAMPLE (LCS)

The LCS analyses were performed according to SOW requirements and the results met specific control limits

Yes X No _____

Comments:

None.

VII. DUPLICATE SAMPLE ANALYSIS

Duplicate sample analyses were performed according to SOW requirements and results met specific control limits.

Yes X No _____

Comments:

None.

VIII. MATRIX SPIKE ANALYSES

Matrix spike analyses were performed according to SOW requirements and results met recommended recovery and precision limits.

Yes _____ No X



Comments:

Percent recoveries that do not meet the matrix spike criteria are summarized in the following table.

Sample ID	Analyte	MS % Recovery	Sample Affected	Qualifier
MHDD40	Arsenic	70.7	MHDD40, MHDD43	J
	Arsenic	70.7	MHDD41, MHDD42, MHDD44, MHDD45, MHDD46	UJ
	Lead	14.3	MHDD40, MHDD41, MHDD42, MHDD43, MHDD44, MHDD45, MHDD46	J
	Selenium	63.7	MHDD40, MHDD41, MHDD42, MHDD43, MHDD44, MHDD45, MHDD46	UJ
MHDD47	Arsenic	10.5	MHBG97, MHBG98, MHDD47, MHDD48, MHDD49, MHDD50, MHDD51, MHDD52	J
	Selenium	73.5	MHBG97, MHBG98	J
	Selenium	73.5	MHDD47, MHDD48, MHDD49, MHDD50	UJ
	Selenium	73.5	MHDD51, MHDD52	J

LX. ICP POST DIGESTION SPIKE RECOVERY

Post digestion spike recovery analyses were performed according to SOW requirements and results met recommended recovery and precision limits.

Yes X No

Comments:

None.

X. SERIAL DILUTION

Serial dilution analyses were performed according to SOW requirements and results met recommended percent difference criteria.

Yes X No

Comments:

None.



XI. GRAPHITE FURNACE ATOMIC ABSORPTION

Graphite furnace atomic absorption analyses (duplicate injections, QC spike recoveries, method of standard additions, etc.) were performed according to SOW requirements and results met recommended recovery and precision limits.

Yes _____ No X

Comments:

Samples for which MSA analysis was required but not performed or MSA results did not meet criteria are summarized in the following table:

Analyte	Correlation Coefficient	Sample Affected	Comment	Qualifier
Arsenic	0.9928	MHBG98	Second run 0.9380	J
		MHDD51	Second run 0.9928	

Sample results that do not meet the analytical spike criteria for GF.AA are summarized in the following table:

Analyte	%R	Sample Affected	Comment	Qualifier
Selenium	67.5	MHDD40		UJ
	68.1	MHDD41		
	67.5	MHDD42		
	63.7	MHDD43		
	67.5	MHDD44		
	79.4	MHDD46		
	61.0	MHDD47		
	77.2	MHDD51		
	36.5	MHBG97		
	57.6	MHBG98		
Selenium	118	MHDD45	Non-detected result	None
Thallium	116	MHDD45	Non-detected result	None

XII. INSTRUMENT DETECTION LIMIT (IDL)

Quarterly IDLs were provided and all IDL met contract requirements.

Yes X No _____

Comments:

None.



XIII. INTERELEMENT CORRECTION FOR ICP

Interelement corrections for ICP were reported.

Yes X No _____

Comments:

None.

XIV. LINEAR RANGE VERIFICATION ANALYSIS

Linear range verification analysis was performed and results were within control limits.

Yes X No _____

Comments:

None.

XV. ADDITIONAL COMMENTS OR PROBLEMS/RESOLUTIONS (not addressed above)

The temperature of samples MHDD40, MHDD41, MHDD42, MHDD43, MHDD44, MHDD45, MHDD46, and MHDD47 upon receipt was 1°C. The temperature of samples MHDD48, MHDD49, MHDD50, MHDD51, MHDD52, MHBG97, and MHBG98 was not recorded on the chain-of-custody records.

Time between the last sample and CCV4 exceeds least time between samples.

Cyanide analysis was not required nor performed for this data package.



REGION VIII

DATA QUALIFIER DEFINITIONS

For the purpose of data validation, the following code letters and associated definitions are provided for use by the data validator to summarize the data quality.

General Qualifiers for use with Organic Data

- R - Reported value is "rejected." Resampling or reanalysis may be necessary to verify the presence or absence of the compound.
- J - The associated numerical value is an estimated quantity because the Quality Control criteria were not met.
- UJ - The reported quantitation limit is estimated because Quality Control criteria were not met. Compound was not detected.





300 UNION BOULEVARD, SUITE 510, LAKEWOOD, COLORADO 80228 U.S.A.

TECHLAW INC.

PHONE: (303) 763-7188 FAX: (303) 763-4896

June 12, 1996.

Ms. Lori Raschke
URS Operating Services, Inc.
1099 18th Street, Suite 710
Denver, CO 80202-8296

RE: Transmittal of Data Validation Reports

Dear Ms. Raschke:

Please find the enclosed Validation Report HG931 for volatile, semi-volatile, and pesticide analyses by CLP methodology for the Durango Lead Project.

The report was prepared in accordance to USEPA Region VIII validation formats and requirements.

If you have any questions regarding this report, please contact me at (303) 763-8881.

Yours sincerely,
TechLaw, Inc.

Robert J. Thielke
Staff Consultant

enclosure

IF: 252-001

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHBG97

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): SOIL Lab Sample ID: MHBG97

Level (low/med): LOW Date Received: 04/12/96

% Solids: 87.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11700	-		P
7440-36-0	Antimony	10.4	U		P
7440-38-2	Arsenic	21.4	-	SN	F
7440-39-3	Barium	219	-		P
7440-41-7	Beryllium	0.63	B		P
7440-43-9	Cadmium	3.3	-	*	P
7440-70-2	Calcium	8850	-		P
7440-47-3	Chromium	11.9	-		P
7440-48-4	Cobalt	7.7	B		P
7440-50-8	Copper	47.1	-		P
7439-89-6	Iron	17200	-		P
7439-92-1	Lead	181	-		F
7439-95-4	Magnesium	3950	-		P
7439-96-5	Manganese	669	-		P
7439-97-6	Mercury	0.22	-		CV
7440-02-0	Nickel	10.4	-		P
7440-09-7	Potassium	2930	-		P
7782-49-2	Selenium	0.25	B	WN	F
7440-22-4	Silver	1.7	B		P
7440-23-5	Sodium	80.3	B		P
7440-28-0	Thallium	0.21	U		F
7440-62-2	Vanadium	40.8	-		P
7440-66-6	Zinc	211	-		P
	Cyanide		-		NR

LR 4/12/96

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. 3

MHBG98

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): SOIL_ Lab Sample ID: MHBG98

Level (low/med): LOW_ Date Received: 04/12/96

% Solids: 90.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19100	-		P
7440-36-0	Antimony	10.1	U		P
7440-38-2	Arsenic	13.1	-	+N	F J
7440-39-3	Barium	224	-		P
7440-41-7	Beryllium	0.79	B		P
7440-43-9	Cadmium	2.7	-	*	P
7440-70-2	Calcium	11400	-		P
7440-47-3	Chromium	13.8	-		P
7440-48-4	Cobalt	11.8	-		P
7440-50-8	Copper	91.5	-		P
7439-89-6	Iron	23900	-		P
7439-92-1	Lead	302	-	S	F
7439-95-4	Magnesium	6010	-		P
7439-96-5	Manganese	1310	-		P
7439-97-6	Mercury	0.12	-		CV
7440-02-0	Nickel	15.1	-		P
7440-09-7	Potassium	2710	-		P
7782-49-2	Selenium	0.26	B	WN	F J
7440-22-4	Silver	2.1	B		P
7440-23-5	Sodium	250	B		P
7440-28-0	Thallium	0.20	U		F J
7440-62-2	Vanadium	31.6	-		P
7440-66-6	Zinc	402	-		P
	Cyanide		-		NR

LR 4/2/96

Color Before: BROWN_ Clarity Before: Texture: MEDIUM

Color After: YELLOW_ Clarity After: Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHDD40

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): WATER

Lab Sample ID: MHDD40

Level (low/med): LOW

Date Received: 04/12/96

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2390	-	-	P
7440-36-0	Antimony	45.5	U	-	P
7440-38-2	Arsenic	1.3	B	N	F
7440-39-3	Barium	61.6	B	-	P
7440-41-7	Beryllium	0.20	U	-	P
7440-43-9	Cadmium	4.7	U	-	P
7440-70-2	Calcium	53800	-	-	P
7440-47-3	Chromium	1.6	U	-	P
7440-48-4	Cobalt	3.9	U	-	P
7440-50-8	Copper	28.3	-	-	P
7439-89-6	Iron	4420	-	-	P
7439-92-1	Lead	45.4	-	SN	F
7439-95-4	Magnesium	7190	-	-	P
7439-96-5	Manganese	587	-	-	P
7439-97-6	Mercury	0.17	B	-	CV
7440-02-0	Nickel	12.4	U	-	P
7440-09-7	Potassium	2160	B	-	P
7782-49-2	Selenium	0.90	U	WN	F
7440-22-4	Silver	4.3	U	-	P
7440-23-5	Sodium	9070	-	-	P
7440-28-0	Thallium	0.90	U	-	F
7440-62-2	Vanadium	2.0	U	-	P
7440-66-6	Zinc	341	-	-	P
	Cyanide		-	-	NR

LR 4/12/96

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. 5

MHDD41

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): WATER Lab Sample ID: MHDD41

Level (low/med): LOW Date Received: 04/12/96

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1990	-		P	
7440-36-0	Antimony	45.5	U		P	
7440-38-2	Arsenic	0.90	U	N	F	J
7440-39-3	Barium	64.4	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	4.7	U		P	
7440-70-2	Calcium	61300			P	
7440-47-3	Chromium	1.6	U		P	UJ
7440-48-4	Cobalt	3.9	U		P	
7440-50-8	Copper	20.4	B		P	
7439-89-6	Iron	2920			P	
7439-92-1	Lead	31.8		SN	F	J
7439-95-4	Magnesium	8960			P	
7439-96-5	Manganese	422			P	
7439-97-6	Mercury	0.15	B		CV	U
7440-02-0	Nickel	12.4	U		P	UJ
7440-09-7	Potassium	2240	B		P	U
7782-49-2	Selenium	0.90	U	WN	F	J
7440-22-4	Silver	4.3	U		P	
7440-23-5	Sodium	10100			P	
7440-28-0	Thallium	0.90	U		F	J
7440-62-2	Vanadium	2.0	U		P	UJ
7440-66-6	Zinc	257			P	
	Cyanide				NR	

LR 4/1/96

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. 6

MHDD42

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): WATER Lab Sample ID: MHDD42

Level (low/med): LOW Date Received: 04/12/96

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1380	-		P
7440-36-0	Antimony	45.5	U		P
7440-38-2	Arsenic	0.90	U	N	F
7440-39-3	Barium	57.0	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	4.7	U		P
7440-70-2	Calcium	61300			P
7440-47-3	Chromium	1.6	U		P
7440-48-4	Cobalt	4.8	B		P
7440-50-8	Copper	15.1	B		P
7439-89-6	Iron	2140			P
7439-92-1	Lead	29.5		SN	F
7439-95-4	Magnesium	9090			P
7439-96-5	Manganese	352			P
7439-97-6	Mercury	0.11	B		CV
7440-02-0	Nickel	12.4	U		P
7440-09-7	Potassium	2750	B		P
7782-49-2	Selenium	0.90	U	WN	F
7440-22-4	Silver	4.3	U		P
7440-23-5	Sodium	12400			P
7440-28-0	Thallium	0.90	U		F
7440-62-2	Vanadium	2.1	B		P
7440-66-6	Zinc	208			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: LR 4/12/96

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHDD43

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): WATER Lab Sample ID: MHDD43

Level (low/med): LOW Date Received: 04/12/96

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1810	-		P
7440-36-0	Antimony	45.5	U		P
7440-38-2	Arsenic	1.2	B	N	F
7440-39-3	Barium	60.3	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	4.7	U		P
7440-70-2	Calcium	60500			P
7440-47-3	Chromium	1.6	U		P
7440-48-4	Cobalt	3.9	U		P
7440-50-8	Copper	18.5	B		P
7439-89-6	Iron	2690			P
7439-92-1	Lead	24.1		N	F
7439-95-4	Magnesium	8490			P
7439-96-5	Manganese	447			P
7439-97-6	Mercury	0.13	B		CV
7440-02-0	Nickel	12.4	U		P
7440-09-7	Potassium	2440	B		P
7782-49-2	Selenium	0.90	U	WN	F
7440-22-4	Silver	4.3	U		P
7440-23-5	Sodium	10600			P
7440-28-0	Thallium	0.90	U		F
7440-62-2	Vanadium	2.0	U		P
7440-66-6	Zinc	242			P
	Cyanide				NR

LR 4/2/96

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHDD44

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): WATER

Lab Sample ID: MHDD44

Level (low/med): LOW

Date Received: 04/12/96

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1860	-		P	
7440-36-0	Antimony	45.5	U		P	
7440-38-2	Arsenic	0.90	U	N	F	J
7440-39-3	Barium	62.6	B		P	
7440-41-7	Beryllium	0.20	U		P	
7440-43-9	Cadmium	4.7	U		P	
7440-70-2	Calcium	61600	-		P	
7440-47-3	Chromium	1.6	U		P	UJ
7440-48-4	Cobalt	3.9	U		P	
7440-50-8	Copper	20.0	B		P	
7439-89-6	Iron	2780	-		P	
7439-92-1	Lead	53.8	-	SN	F	J
7439-95-4	Magnesium	8670	-		P	
7439-96-5	Manganese	450	-		P	
7439-97-6	Mercury	0.15	B		CV	U
7440-02-0	Nickel	12.4	U		P	UJ
7440-09-7	Potassium	2700	B		P	
7782-49-2	Selenium	0.90	U	WN	F	J
7440-22-4	Silver	4.3	U		P	
7440-23-5	Sodium	11000	-		P	
7440-28-0	Thallium	0.90	U		F	J
7440-62-2	Vanadium	2.5	B		P	J
7440-66-6	Zinc	331	-		P	
	Cyanide		-		NR	

Color Before: COLORLESS Clarity Before: CLEAR Texture: 6R⁴/2/96

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHDD45

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): WATER Lab Sample ID: MHDD45

Level (low/med): LOW Date Received: 04/12/96

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	37.4	B		P
7440-36-0	Antimony	45.5	U		P
7440-38-2	Arsenic	0.90	U	N	F
7440-39-3	Barium	0.57	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	4.7	U		P
7440-70-2	Calcium	40.3	B		P
7440-47-3	Chromium	1.6	U		P
7440-48-4	Cobalt	3.9	U		P
7440-50-8	Copper	2.9	U		P
7439-89-6	Iron	8.7	U		P
7439-92-1	Lead	1.2	B	N	F
7439-95-4	Magnesium	38.1	B		P
7439-96-5	Manganese	2.0	U		P
7439-97-6	Mercury	0.15	B		CV
7440-02-0	Nickel	12.4	U		P
7440-09-7	Potassium	262	U		P
7782-49-2	Selenium	0.90	U	WN	F
7440-22-4	Silver	4.7	B		P
7440-23-5	Sodium	111	B		P
7440-28-0	Thallium	0.90	U	W	F
7440-62-2	Vanadium	2.0	U		P
7440-66-6	Zinc	3.6	U		P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture: LR 4/12/96

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHDD46

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): WATER

Lab Sample ID: MHDD46

Level (low/med): LOW

Date Received: 04/12/96

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4060	-		P	
7440-36-0	Antimony	45.5	U		P	
7440-38-2	Arsenic	0.90	U	N	F	J
7440-39-3	Barium	143	B		P	
7440-41-7	Beryllium	0.24	B		P	
7440-43-9	Cadmium	4.7	U		P	
7440-70-2	Calcium	73800			P	
7440-47-3	Chromium	1.6	U		P	UJ
7440-48-4	Cobalt	3.9	U		P	
7440-50-8	Copper	4.1	B		P	
7439-89-6	Iron	5210			P	
7439-92-1	Lead	4.5		N	F	U, J
7439-95-4	Magnesium	17900			P	
7439-96-5	Manganese	94.1			P	
7439-97-6	Mercury	0.15	B		CV	U
7440-02-0	Nickel	12.4	U		P	UJ
7440-09-7	Potassium	2730	B		P	
7782-49-2	Selenium	0.90	U	WN	F	J
7440-22-4	Silver	4.3	U		P	
7440-23-5	Sodium	8400			P	
7440-28-0	Thallium	0.90	U		F	J
7440-62-2	Vanadium	9.7	B		P	J
7440-66-6	Zinc	27.9			P	
	Cyanide				NR	

Color Before: BROWN Clarity Before: CLOUDY Texture: LR 4/12/96

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHDD47

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): SOIL Lab Sample ID: MHDD47

Level (low/med): LOW Date Received: 04/12/96

% Solids: 70.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8210			P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	11.2		SN	F
7440-39-3	Barium	155			P
7440-41-7	Beryllium	0.53	B		P
7440-43-9	Cadmium	4.9		*	P
7440-70-2	Calcium	4070			P
7440-47-3	Chromium	6.5			P
7440-48-4	Cobalt	11.7	B		P
7440-50-8	Copper	130			P
7439-89-6	Iron	20000			P
7439-92-1	Lead	334		S	F
7439-95-4	Magnesium	4160			P
7439-96-5	Manganese	2470			P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	6.6	B		P
7440-09-7	Potassium	1460			P
7782-49-2	Selenium	0.25	U	WN	F
7440-22-4	Silver	3.0			P
7440-23-5	Sodium	81.1	B		P
7440-28-0	Thallium	0.25	U		F
7440-62-2	Vanadium	21.8			P
7440-66-6	Zinc	1000			P
	Cyanide				NR

LR 4/12/96

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHDD48

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): SOIL Lab Sample ID: MHDD48

Level (low/med): LOW Date Received: 04/12/96

% Solids: 81.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7070			P
7440-36-0	Antimony	11.2	U		P
7440-38-2	Arsenic	10.7		SN	F J
7440-39-3	Barium	281			P
7440-41-7	Beryllium	0.33	B		P U
7440-43-9	Cadmium	498		*	P
7440-70-2	Calcium	11600			P
7440-47-3	Chromium	6.0			P J
7440-48-4	Cobalt	13.3			P
7440-50-8	Copper	284			P
7439-89-6	Iron	24300			P
7439-92-1	Lead	311		S	F
7439-95-4	Magnesium	4250			P
7439-96-5	Manganese	3060			P
7439-97-6	Mercury	0.07	B		CV
7440-02-0	Nickel	9.3	B		P J
7440-09-7	Potassium	1500			P
7782-49-2	Selenium	0.22	U	N	F J
7440-22-4	Silver	8.7			P
7440-23-5	Sodium	95.7	B		P
7440-28-0	Thallium	0.22	U		F J
7440-62-2	Vanadium	357			P
7440-66-6	Zinc	28500			P
	Cyanide				NR

LR 4/12/96

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHDD49

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): SOIL Lab Sample ID: MHDD49

Level (low/med): LOW Date Received: 04/12/96

% Solids: 70.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6030	-		P
7440-36-0	Antimony	12.9	U		P
7440-38-2	Arsenic	8.5	-	SN	F J
7440-39-3	Barium	112	-		P
7440-41-7	Beryllium	0.37	B		P U
7440-43-9	Cadmium	3.6	-	*	P
7440-70-2	Calcium	6520	-		P
7440-47-3	Chromium	4.2	-		P J
7440-48-4	Cobalt	7.8	B		P
7440-50-8	Copper	125	-		P
7439-89-6	Iron	15900	-		P
7439-92-1	Lead	226	-		F
7439-95-4	Magnesium	3440	-		P
7439-96-5	Manganese	1570	-		P
7439-97-6	Mercury	0.07	U		CV
7440-02-0	Nickel	4.2	B		P J
7440-09-7	Potassium	1020	B		P
7782-49-2	Selenium	0.25	U	N	F J
7440-22-4	Silver	1.9	B		P
7440-23-5	Sodium	111	B		P
7440-28-0	Thallium	0.25	U		F J
7440-62-2	Vanadium	16.2	-		P
7440-66-6	Zinc	813	-		P
	Cyanide		-		NR

LR 4/12/96

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments:

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. 14

MHDD50

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): SOIL Lab Sample ID: MHDD50

Level (low/med): LOW Date Received: 04/12/96

% Solids: 73.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6300	-		P
7440-36-0	Antimony	12.4	U		P
7440-38-2	Arsenic	9.2		SN	F
7440-39-3	Barium	134	-		P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	4.0	-	*	P
7440-70-2	Calcium	9610	-		P
7440-47-3	Chromium	5.0	-		P
7440-48-4	Cobalt	9.7	B		P
7440-50-8	Copper	142	-		P
7439-89-6	Iron	17200	-		P
7439-92-1	Lead	260	-		F
7439-95-4	Magnesium	3830	-		P
7439-96-5	Manganese	1800	-		P
7439-97-6	Mercury	0.07	B		CV
7440-02-0	Nickel	6.9	B		P
7440-09-7	Potassium	1080	B		P
7782-49-2	Selenium	0.25	U	N	F
7440-22-4	Silver	3.1	-		P
7440-23-5	Sodium	84.5	B		P
7440-28-0	Thallium	0.25	U		F
7440-62-2	Vanadium	18.3	-		P
7440-66-6	Zinc	972	-		P
	Cyanide		-		NR

LR 4/12/96

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHDD51

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): SOIL Lab Sample ID: MHDD51

Level (low/med): LOW Date Received: 04/12/96

% Solids: 66.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6350			P
7440-36-0	Antimony	13.7	U		P
7440-38-2	Arsenic	6.6		+N	F
7440-39-3	Barium	226			P
7440-41-7	Beryllium	0.55	B		P
7440-43-9	Cadmium	1.6		*	P
7440-70-2	Calcium	75000			P
7440-47-3	Chromium	6.2			P
7440-48-4	Cobalt	7.1	B		P
7440-50-8	Copper	22.4			P
7439-89-6	Iron	19400			P
7439-92-1	Lead	21.1		S	F
7439-95-4	Magnesium	9580			P
7439-96-5	Manganese	197			P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	16.7			P
7440-09-7	Potassium	2080			P
7782-49-2	Selenium	0.92	B	WN	F
7440-22-4	Silver	1.3	U		P
7440-23-5	Sodium	126	B		P
7440-28-0	Thallium	0.27	U		F
7440-62-2	Vanadium	24.7			P
7440-66-6	Zinc	76.6			P
	Cyanide				NR

LR 4/2/96

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MHDD52

Lab Name: SVL_ANALYTICAL_INC. Contract: 68-D5-0138

Lab Code: SILVER Case No.: 24569 SAS No.: SDG No.: MHBG97

Matrix (soil/water): SOIL Lab Sample ID: MHDD52

Level (low/med): LOW Date Received: 04/12/96

% Solids: 78.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8210			P
7440-36-0	Antimony	11.6	U		P
7440-38-2	Arsenic	8.2		SN	F
7440-39-3	Barium	180			P
7440-41-7	Beryllium	0.54	B		P
7440-43-9	Cadmium	1.5		*	P
7440-70-2	Calcium	21700			P
7440-47-3	Chromium	8.7			P
7440-48-4	Cobalt	6.0	B		P
7440-50-8	Copper	26.9			P
7439-89-6	Iron	16600			P
7439-92-1	Lead	52.8			F
7439-95-4	Magnesium	5680			P
7439-96-5	Manganese	268			P
7439-97-6	Mercury	0.34			CV
7440-02-0	Nickel	14.4			P
7440-09-7	Potassium	2480			P
7782-49-2	Selenium	0.40	B	N	F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	118	B		P
7440-28-0	Thallium	0.23	U		F
7440-62-2	Vanadium	24.4			P
7440-66-6	Zinc	143			P
	Cyanide				NR

LR 4/12/96

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

REGION VIII
SUMMARY OF CLP DATA QUALITY ASSURANCE REVIEW
ORGANICS - VOA, BNA, PEST/AROCLOR

Case/SAS No.	Site Name		Operable Unit
24569	Durango Lead Smelter		
RPM Name			
Pat Smith			
Contractor Laboratory	Contract No.	SDG No.	Laboratory TPO/Region
Industrial Environmental Analysts (IEA)	68-D5-0011	HG931	

Data Reviewer Bill Fear/Thad Corrigan

Review Completion Date June 5, 1996

Sample ID	Sample Location	Matrix	Analysis
HQ931	DL-SW-1	Water	CLP/RAS Volatile, Semivolatile and Pesticide/PCB
HQ932	DL-SE-1	Soil	
HQ933	DL-SW-2	Water	
HQ934	DL-SE-2	Soil	
HQ935	DL-SW-6	Water	
HQ936	LL-SW-1	Water	CLP RAS Volatile
HQ937	DL-SW-7	Water	
HQ938	LL-SE-1	Soil	
			CLP/RAS Volatile, Semivolatile and Pesticide/PCB



DATA QUALITY STATEMENT*

☐ Data are ACCEPTABLE according to EPA Functional Guidelines with no qualifiers (flags) added by the reviewer.

☐ Data are UNACCEPTABLE according to EPA Functional Guidelines.

☒ Data are acceptable with QUALIFICATIONS noted in review.*

Telephone/Communication Logs Enclosed? Yes ☐ No ☒

TPO Attention Required? Yes ☒ No ☐ If yes, list the items that require attention:

The volatile analyses for samples HQ933, HQ935, and HQ937 were analyzed beyond the seven-day technical holding time for unpreserved water samples (see Section II).

The semivolatile analyses for samples HQ932 and HQ934 contained unreported TICs (see Section IX).

The pesticide/PCB samples HQ933 and HQ935 were extracted beyond the seven-day technical holding times for water samples.

* Please see Data Qualifier Definitions attached to the end of this report.



ORGANIC RAS DATA QUALITY ASSURANCE REVIEW

REVIEW NARRATIVE SUMMARY

This data package was reviewed according to the EPA document "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," February, 1994.

Case 24569, SDG HQ931 consisted of eight (8) samples for CLP RAS volatile analyses and seven (7) samples for CLP RAS semivolatile and pesticide/PCB organic analyses.

The laboratory did not perform the required library search on all non-target sample components (see Semivolatile Section IX). All tentatively identified compounds (TICs) were qualified "NJ" - tentatively identified at an estimated concentration. TICs detected in the samples and associated blanks were qualified "R" rejected.

The following tables list all data qualifiers added to the data.

Sample Number	Volatile Compound	Qualifier	Reason for Qualification	Review Section
HQ933, HQ935, HQ937	Benzene, Toluene, Chlorobenzene, Ethylbenzene, Styrene, Total Xylenes	UJ	7-day technical holding time exceeded	II
All	Acetone	UJ	Initial calibration RSDs > 30%	IV
HQ932, HQ934, HQ938	Chloroethane	UJ	Initial calibration RSD > 30%	IV
HQ932, HQ934, HQ938	Bromoform, Tetrachloroethene	UJ	Continuing calibration %Ds > 25%	IV

Sample Number	Semivolatile Compound	Qualifier	Reason for Qualification	Review Section
HQ931, HQ933, HQ935, HQ936	Phenol, Hexachlorocyclopentadiene, 2,4-Dinitrophenol, Pentachlorophenol	UJ	Continuing calibration %Ds > 25%	IV
HQ932, HQ934, HQ938	Phenol, 2,4-Dinitrophenol	UJ	Continuing calibration %Ds > 25%	IV

Sample Number	Pesticide Compound	Qualifier	Reason for Qualification	Review Section
HQ933, HQ935	All	UJ	7-day technical holding times exceeded	II
All	beta-BHC	UJ	Initial calibration %RSDs > 20%	V
All	4,4'-DDT	UJ		



ORGANIC RAS VOLATILE DATA QUALITY ASSURANCE REVIEW

SOW Number OLMO3.0

Revision NA

RAS Organic Data Completeness Checklist

Quality Control Summary Package

- P Surrogate Recovery Summary (Form II)
- P MS/MSD Summary (Form III)
- P Method Blank Summary (Form IV)
- P GC/MS Tuning and Mass Calibration (Form V)

Sample Data Package

- P Holding Times (SMO Sample Traffic Reports)
- P Organic Analysis Data Sheets (Form I)
- P Reconstructed Ion Chromatogram(s) (RIC)
- P Quantitation Reports
- P Mass Spectral Data
- NA EPA/NIH Mass Spectral Library Search for TICs

Standards Data Package

- NR Current List of Laboratory/Instrument Detection Limits
- P Initial Calibration Data (Form VI) for each instrument
- P Continuing Calibration Data (Form VII) for each instrument
- P Internal Standard Area Summary (Form VIII)
- P VOA Standards RICs
- P VOA Standards Quantitation Reports

Raw QC Package

- P BFB mass spectra and mass listings

Reagent Blank Data

- P Organic Analysis Data Sheets (Form I)
- P RIC or Total Ion Chromatogram
- P Quantitation Reports
- P Mass Spectral Data
- NA EPA/NIH Library Search for TICs

Matrix Spike/Matrix Spike Duplicate Data

- P Organic Analysis Data Sheets
- P RIC
- P Quantitation Reports
- NR Mass Spectral Data
- NR EPA/NIH Library Search for TICs

KEY:

- P = Provided in original data package, as required by the SOW
- R = Provided as Resubmission
- NP = Not provided in original data package or as resubmission
- NR = Not required under the SOW
- NA = Not applicable to this data package or analysis



ORGANIC RAS VOLATILE DATA QUALITY ASSURANCE REVIEW

I. DELIVERABLES

All deliverables were present as specified in the statement of work.

VOA: Yes ☒ No ☐

Comments:

None.

II. HOLDING TIMES

All CLP-SOW holding times were met.

VOA: Yes ☒ No ☐

Comments:

None.

All 40 CFR Part 136 technical holding times were met.

VOA: Yes ☐ No ☒

Comments:

It was not clear as to whether the water samples were acid preserved. The case narrative indicated a pH less than 2; however, the volatile pH log indicated a pH of 6. It is assumed that the water samples were not acid preserved and the aromatic compounds in samples HQ933, HQ935, and HQ937 were qualified accordingly.

The following table lists samples that were analyzed outside technical holding times:

Sample Number	Days Outside Limits	Compound	Qualifier
HQ933, HQ935, HQ937	1	Benzene, Toluene, Total Xylenes, Ethylbenzene, Chlorobenzene, Styrene	UJ



III. BFB PERFORMANCE RESULTS

The BFB performance results were within the specified control limits. All appropriate BFB results were included.

VOA: Yes X No

Comments:

None.

IV. INSTRUMENT CALIBRATIONS: INITIAL AND CONTINUING STANDARDS

Initial instrument calibrations were performed according to SOW requirements and met the specified control limits listed in the functional guidelines.

VOA: Yes No X

Comments:

The initial calibration met all SOW criteria. However, the %RSDs for two compounds were outside the functional guideline criteria. The following table lists the %RSDs for compounds which exceeded criteria (30%):

Compound	%RSD	Associated Sample	Qualifier
Acetone	39.5	HQ931, HQ933, HQ935, HQ936, HQ937	UJ
Chloroethane	33.8	HQ932, HQ934, HQ938	UJ
Acetone	33.0		

Continuing instrument calibration was performed according to SOW requirements and met specified control limits listed in the functional guidelines.

VOA: Yes No X

Comments:

The continuing calibrations met all SOW criteria. However, the %Ds for two compounds were outside the functional guideline criteria. The following table lists the %Ds for compounds which exceeded criteria (25%):

Compound	%Difference	Associated Sample	Qualifier
Bromoform	30.7	HQ932, HQ934, HQ938	UJ
Tetrachloroethene	25.1		



V. SURROGATE COMPOUND RECOVERY

Surrogate compound recovery analysis was performed according to SOW requirements and results met specified control limits.

VOA: Yes X No _____

Comments:

None.

VI. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis was performed according to SOW requirements and results met recommended recovery and precision limits.

VOA: Yes X No _____

Comments:

None.

VII. INTERNAL STANDARD AREA

Internal standard area analysis was performed according to SOW requirements and results met specified control limits.

VOA: Yes X No _____

Comments:

None.

VIII. LABORATORY BLANK ANALYSIS RESULTS

The laboratory blank analysis was performed according to SOW requirements and results met specified control limits.

VOA: Yes X No _____

Comments:

No contaminants were found in the volatile method blanks or storage blank.

No tentatively identified compounds (TICs) were found in the volatile blanks and samples.



IX. SAMPLE RESULTS

The sample results were reviewed and all compound identifications were acceptable and met contract requirements.

VOA: Yes X No _____

Comments:

None.

X. ADDITIONAL COMMENTS OR PROBLEMS/RESOLUTIONS (not addressed above)

VOA:

None.



ORGANIC RAS SEMIVOLATILE DATA QUALITY ASSURANCE REVIEW

SOW Number OLMO3.0
Revision NA

RAS Organic Data Completeness Checklist

Quality Control Summary Package

- P Surrogate Recovery Summary (Form II)
- P MS/MSD Summary (Form III)
- P Method Blank Summary (Form IV)
- P GC/MS Tuning and Mass Calibration (Form V)

Sample Data Package

- P Holding Times (SMO Sample Traffic Reports)
- P Organic Analysis Data Sheets (Form I)
- P Reconstructed Ion Chromatogram(s) (RIC)
- P Quantitation Reports
- P Mass Spectral Data
- P EPA/NIH Mass Spectral Library Search for TICs

Standards Data Package

- NR Current List of Laboratory/Instrument Detection Limits
- P Initial Calibration Data (Form VI) for each instrument
- P Continuing Calibration Data (Form VII) for each instrument
- P Internal Standard Area Summary (Form VIII)
- P SVOA Standards RICs
- P SVOA Standards Quantitation Reports

Raw QC Package

- P DFTPP mass spectra and mass listings

Reagent Blank Data

- P Organic Analysis Data Sheets (Form I)
- P RIC or Total Ion Chromatogram
- P Quantitation Reports
- P Mass Spectral Data
- P EPA/NIH Library Search for TICs

Matrix Spike/Matrix Spike Duplicate Data

- P Organic Analysis Data Sheets
- P RIC
- P Quantitation Reports
- NA Mass Spectral Data
- NA EPA/NIH Library Search for TICs

KEY:

- P = Provided in original data package, as required by the SOW
- R = Provided as Resubmission
- NP = Not provided in original data package or as resubmission
- NR = Not required under the SOW
- NA = Not applicable to this data package or analysis



ORGANIC RAS SEMIVOLATILE DATA QUALITY ASSURANCE REVIEW

I. DELIVERABLES

All deliverables were present as specified in the statement of work.

BNA: Yes X No _____

Comments:

None.

II. HOLDING TIMES

All CLP-SOW holding times were met.

BNA: Yes X No _____

Comments:

None.

All 40 CFR Part 136 technical holding times were met.

BNA: Yes X No _____

Comments:

None.

III. DFTPP PERFORMANCE RESULTS

The DFTPP performance results were within the specified control limits. All appropriate DFTPP results were included.

BNA: Yes X No _____

Comments:

None.

IV. INSTRUMENT CALIBRATIONS: INITIAL AND CONTINUING STANDARDS

Initial instrument calibrations were performed according to SOW requirements and met the specified control limits listed in the functional guidelines.

BNA: Yes X No _____

Comments:

None.

Continuing instrument calibration was performed according to SOW requirements and met specified control limits listed in the functional guidelines.

BNA: Yes _____ No X

Comments:

The continuing calibrations met all SOW criteria. However, the %Ds for several compounds were outside the functional guideline criteria. The following table lists the %Ds for compounds which exceeded criteria (25%):

Compound	% Difference	Associated Sample	Qualifier
Phenol	25.4	HQ931, HQ933, HQ935, HQ936	UJ
Hexachlorocyclopentadiene	25.2		
2,4-Dinitrophenol	39.4		
Pentachlorophenol	25.3		
Phenol	26.2	HQ932, HQ934, HQ938	UJ
2,4-Dinitrophenol	55.7		

V. SURROGATE COMPOUND RECOVERY

Surrogate compound recovery analysis was performed according to SOW requirements and results met specified control limits.

BNA: Yes X No _____

Comments:

None.



VI. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis was performed according to SOW requirements and results met recommended recovery and precision limits.

BNA: Yes _____ No X

Comments:

Samples HQ931 and HQ932 were spiked with matrix spiking compounds. All recoveries and RPDs were within QC limits in the MS/MSD analyses performed on sample HQ932 (soil matrix). The following table lists the MS/MSD results that were outside criteria in the MS/MSD analyses performed on sample HQ931:

Compound	%R		RPD	Control Limits %R
	MS	MSD		
4-Nitrophenol	81	97	--	10-80
Pentachlorophenol	--	120	--	9-103

No qualifiers were added to the data as organic sample results are not qualified based solely on MS/MSD results.

These compounds were not found in the associated sample.

VII. INTERNAL STANDARD AREA

Internal standard area analysis was performed according to SOW requirements and results met specified control limits.

BNA: Yes X No _____

Comments:

The incorrect area count was reported for the internal standard phenanthrene-d10 on Form 8 for the 4/22/96 12-hour standard. All samples are within QC limits when compared to the correct area count.

Additionally, the method blanks were not reported on the Form 8 for the 4/19/96 analyses. The raw data were used to evaluate and verify that the areas and retention times were within control limits.



VIII. LABORATORY BLANK ANALYSIS RESULTS

The Laboratory blank analysis was performed according to SOW requirements and results met specified control limits.

BNA: Yes X No

Comments:

The blank was not contaminated with target analytes. However, the water matrix blank (SBLKH1) was contaminated with two TICs and the soil matrix blank (SBLKH2) was contaminated with 3 TICs.

All TICs in the associated samples were previously qualified "NJ" - estimated tentatively identified compounds in the Review Summary. The following table lists blank results, associated samples and qualifiers added to the data.

Blank ID	Extraction Date	TIC Retention Time	Associated Sample	Qualifier
SBLKH1	4-16-96	4.13	Waters	None*
SBLKH1	4-16-96	4.38	HQ931	R
SBLKH2	4-17-96	4.24	HQ932, HQ934, HQ938	R
SBLKH2	4-17-96	5.82		
SBLKH2	4-17-96	5.07		

* The TIC at 4.13 minutes in SBLKH1 was not found in the associated samples

The laboratory did not flag the TIC at retention time 5.07 minutes in the associated samples with the "B" qualifier.

The TIC at retention time 4.38 in sample HQ931 was not reported on the Form 1F but was reported as a cyclic alkane in the narrative. However, mass spectra verify that this is the same TIC found in the blank.

IX. SAMPLE RESULTS

The sample results were reviewed and all compound identifications were acceptable and met SOW requirements.

BNA: Yes No X

Comments:

A potential TIC peak at retention time 14.3 minutes in sample HQ932 and several late eluting peaks in sample HQ934 were not searched for, identified, or reported.

The TIC at retention time 4.23-4.27 minutes in the soil analyses was identified as an aldol condensation product. This TIC was also identified as a blank contaminant and was, therefore, rejected. No further action is taken.



X. ADDITIONAL COMMENTS OR PROBLEMS/RESOLUTIONS (not addressed above)

BNA

None



TechLaw Inc

ORGANIC RAS PESTICIDE/AROCLOR DATA QUALITY ASSURANCE REVIEW

SOW Number OLMO3 0

Revision NA

RAS Organic Data Completeness Checklist

Quality Control Summary Package

- P Surrogate Recovery Summary (Form II)
- P MS/MSD Summary (Form III)
- P Method Blank Summary (Form IV)
- NA GC/MS Tuning and Mass Calibration (Form V)

Sample Data Package

- P Holding Times (SMO Sample Traffic Reports)
- P Organic Analysis Data Sheets (Form I)
- P GC/EC Chromatogram(s)
- P Pesticide Identification Summary for Single Component Analytes (Form X-1) - for positive results only
- NA Pesticide Identification Summary for Multicomponent Analytes (Form X-2) - for positive results only

Standards Data Package

- NR Current List of Laboratory/Instrument Detection Limits
- P Pesticide Initial Calibration of Single Component Analytes (Form VI-1,2)
- P Pesticide Initial Calibration of Multicomponent Analytes (Form VI-3)
- P Pesticide Analyte Resolution Summary (Form VI-4)
- P Pesticide Calibration Verification Summary (Form VII-1,2)
- P Pesticide Analytical Sequence (Form VIII)
- P Pesticide Florisil Cartridge Check (Form IX-1)
- P Pesticide GPC Calibration (Form IX-2)
- P Pesticide/Aroclor Standard Chromatograms and Data System Printouts

Reagent Blank Data

- P Organic Analysis Data Sheets (Form I)
- P GC/EC Chromatograms and Data System Printouts

Matrix Spike/Matrix Spike Duplicate Data

- P Organic Analysis Data Sheets
- P GC/EC Chromatograms and Data System Printouts

KEY

- P = Provided in original data package, as required by the SOW
- R = Provided as Resubmission
- NP = Not provided in original data package or as resubmission
- NR = Not required under the SOW
- NA = Not applicable to this data package or analysis



ORGANIC RAS PESTICIDE/AROCLOR DATA QUALITY ASSURANCE REVIEW

I. DELIVERABLES

All deliverables were present as specified in the statement of work

PEST/AROCLOR Yes X No

Comments

None

II. HOLDING TIMES

All CLP-SOW holding times were met

PEST/AROCLOR Yes X No

Comments

None

All 40 CFR Part 136 technical holding times were met

PEST/AROCLOR Yes No X

Comments

The laboratory receipt temperature was not reported. However, the case narrative indicated that no problems were encountered.

The extraction for two water samples was completed 1 day outside the technical holding times.

The following table lists samples that were extracted outside technical holding times

Sample Number	Days Outside Limits/ Extraction or Analysis	Compound	Qualifier
HQ933 HQ935	1/Extraction	All	UJ

The breakdown of 4,4'-DDT and of Endrin was less than 20% and the combined breakdown was less than 30%

PEST/AROCLOR Yes X No

Comments

None

The decachlorobiphenyl (DCB) and tetrachloro-m-xylene (TCX) retention time shifts were within the specified control limits

PEST/AROCLOR Yes X No

Comments

None

Initial instrument calibrations were performed according to SOW requirements and met the specified control limits listed in the functional guidelines

PEST/AROCLOR Yes No X

Comments

The initial calibration met all SOW requirements. However, the %RSDs for two compounds were outside the functional guideline criteria. The following table lists the %RSDs for compounds which exceeded criteria (20%)

Compound	%RSD	Associated Sample	Qualifier
beta-BHC	21.2	All	UJ
4,4'-DDT	22.9		

Continuing instrument calibration was performed according to SOW requirements and met specified control limits listed in the functional guidelines

PEST/AROCLOR Yes X No

Comments

None

VIII. ADDITIONAL COMMENTS OR PROBLEMS/RESOLUTIONS (not addressed above)

PEST/AROCOLOR

The various CRQLs for the water samples were not reported with two significant figures. In addition, various CRQLs for the soil sample HQ934 did not appear to be rounded correctly after being adjusted to account for its percent solids.



1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

000002
EPA SAMPLE NO

HQ931

Lab Name: IEA-NJ Contract: 63D50011

Lab Code: IEANJ Case No 24569 SAS No.: SDG No HQ931

Matrix: (soil/water) Water

Lab Sample ID: 61422001

Sample wt/vol: 5 (g/mL) ml

Lab File ID: A8080

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: not dec.

Date Analyzed: 04/17/96

GC Column: RTX-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/l

Q

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
55-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
73-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-43-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-88-3	Toluene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Total Xylenes	10	U

FORM 1 VOA

COPY

TC 01/12/96 OLM03.0

000023

13
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

HQ931

Lab Name: IEA-NJ

Contract: 63D50011

Lab Code: IEANJ Case No.: 24569 SAS No: SDG No.: HQ931

Matrix: (soil/water) Water

Lab Sample ID: 61422001

Sample wt/vol 5 (g/mL) ml

Lab File ID: A3080

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: not dec.

Date Analyzed: 04/17/96

GC Column: RTX-624 ID: 0 53 (mm)

Dilution Factor: 1 0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs Found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC	Q
01.				
02.				
03.				
04.				
05.				
06.				
07.				
08.				
09.				
10.				
11.				
12.				
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29.				
30.				

FORM I VOA-TIC

OLM03 0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

000026
EPA SAMPLE NO

HQ932

Lab Name: IEA-NJ Contract: 63D50011
Lab Code: IEANJ Case No.: 24569 SAS No.: SDG No. HQ931
Matrix: (soil/water) Soil Lab Sample ID: 61422004
Sample wt/vol: 5 (g/mL) g Lab File ID A3123
Level: (low/med) LOW Date Received: 04/12/96
% Moisture: not dec. 24 Date Analyzed: 04/18/96
GC Column: RTX-624 ID: 0.53 (mm) Dilution Factor: 1.0
Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO COMPOUND CONCENTRATION UNITS.
(ug/L or ug/Kg) ug/kg Q

74-37-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	13	U
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
55-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-37-5	1,2-Dichloropropane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
79-01-5	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10061-02-6	Trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
103-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethane	13	U
108-88-3	Toluene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
103-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Total Xylenes	13	U

FORM 1 VOA

OLM03 0

13
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

IEA SAMPLE NO.

HQ932

Lab Name: IEA-NJ

Contract 68D50011

Lab Code: IEANJ Case No. 24569 SAS No. SDG No.: HQ931

Matrix (soil/water) Soil

Lab Sample ID 61422004

Sample wt/vol. 5 (g/mL) g

Lab File ID. A8123

Level. (low/med) LOW

Date Received 04/12/96

% Moisture. not dec. 24

Date Analyzed: 04/18/96

GC Column: RTX-624 ID: 0 53 (mm)

Dilution Factor. 1 0

Soil Extract Volume (uL)

Soil Aliquot Volume: (uL)

Number TICs Found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01				
02				
03				
04				
05				
06				
07				
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09				
10				
11				
12				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 600070

HQ933

Lab Name IEA-NJ

Contract 68D50011

Lab Code: IEANJ Case No. 24569 SAS No. SDG No HQ931

Matrix: (soil/water) Water

Lab Sample ID 61422007

Sample wt/vol: 5 (g/mL) ml

Lab File ID: A8083

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: not dec.

Date Analyzed 04/17/96

GC Column: RTX-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/l Q

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-65-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
73-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloroethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethane	10	U
108-88-3	Toluene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Total Xylenes	10	U

FORM I VOA

OLM03 0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

6000-1
EPA SAMPLE NO

HQ933

Lab Name: IEA-NJ Contract: 66D50011

Lab Code IEANJ Case No 24569 SAS No : SDG No : HQ931

Matrix. (soil/water) Water Lab Sample ID. 51422007

Sample wt/vol: 5 (g/mL) ml Lab File ID. A3083

Level: (low/med) LOW Date Received. 04/12/96

% Moisture: not dec. Date Analyzed: 04/17/96

GC Column. RTX-624 ID: 0 53 (mm) Dilution Factor: 1.0

Soil Extract Volume. (uL) Soil Aliquot Volume: (uL)

Number TICs Found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/l

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.				
02.				
03.				
04.				
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07.				
08.				
09.				
10.				
11.				
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27.				
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29.				
30.				

FORM I VOA-TIC

OLM03 0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

00003.1
EPA SAMPLE NO.

HQ934

Lab Name: IEA-NJ

Contract: 68D50011

Lab Code IEANJ

Case No : 24569

SAS No.:

SDG No.: HQ931

Matrix: (soil/water) Soil

Lab Sample ID: 61422008

Sample wt/vol 5 (g/mL) g

Lab File ID: A8126

Level (low/med) LOW

Date Received: 04/12/96

% Moisture: not dec. 21

Date Analyzed: 04/18/96

GC Column: RTX-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/kg

Q

74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	13	U
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	13	U
75-35-4	1,1-Dichloroethene	13	U
75-34-3	1,1-Dichloroethane	13	U
540-59-0	1,2-Dichloroethene (total)	13	U
67-66-3	Chloroform	13	U
107-06-2	1,2-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	13	U
55-23-5	Carbon Tetrachloride	13	U
75-27-4	Bromodichloromethane	13	U
78-37-5	1,2-Dichloropropane	13	U
10051-01-5	cis-1,3-Dichloropropene	13	U
79-01-6	Trichloroethene	13	U
124-48-1	Dibromochloromethane	13	U
79-00-5	1,1,2-Trichloroethane	13	U
71-43-2	Benzene	13	U
10051-02-6	Trans-1,3-Dichloropropene	13	U
75-25-2	Bromoform	13	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	13	U
108-33-3	Toluene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U
100-42-5	Styrene	13	U
1330-20-7	Total Xylenes	13	U

FORM I VOA

OLM03.0

(00035

15
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

HQ934

Lab Name: IEA-NJ

Contract 53D50011

Lab Code: IEANJ

Case No.: 24569

SAS No

SDG No. HQ931

Matrix. (soil/water) Soil

Lab Sample ID: 61422008

Sample wt/vol: 5 (g/mL) g

Lab File ID A8126

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: not dec. 21

Date Analyzed: 04/13/96

GC Column: RTX-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/kg

Number TICs Found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.				
02.				
03.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

C00035
EPA SAMPLE NO

HQ935

Lab Name: IEA-NJ Contract: 53D50011

Lab Code: IEANJ Case No: 24559 SAS No.: SDG No: HQ931

Matrix: (soil/water) Water

Lab Sample ID: 51422009

Sample wt/vol: 5 (g/mL) ml

Lab File ID: A8084

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: not dec.

Date Analyzed: 04/17/96

GC Column: RTX-624 ID: 0.53 (mm)

Dilution Factor: 1 0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/l Q

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-13-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-5	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
109-88-3	Toluene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Total Xylenes	10	U

FORM I VOA

OLM03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

HQ935

Lab Name: IEA-NJ

Contract: 63D50011

Lab Code: IEANJ Case No.: 24569 SAS No.: SDG No: HQ931

Matrix: (soil/water) Water

Lab Sample ID: 61422009

Sample wt/vol: 5 (g/mL) mL

Lab File ID: A8084

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: not dec.

Date Analyzed: 04/17/96

GC Column: RTX-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

Number TICs Found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/l

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01				
02				
03				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

0000.2
EPA SAMPLE NO

HQ936

Lab Name: IEA-NJ Contract 68D50011
Lab Code: IEANJ Case No.: 24569 SAS No. SDG No.: HQ931
Matrix: (soil/water) Water Lab Sample ID 61422011
Sample wt/vol. 5 (g/mL) ml Lab File ID: A3036
Level: (low/med) LOW Date Received: 04/12/96
% Moisture: not dec. Date Analyzed: 04/17/96
GC Column: RTX-624 ID: 0.53 (mm) Dilution Factor: 1.0
Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/l Q

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-37-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
103-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-13-4	Tetrachloroethene	10	U
103-88-3	Toluene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
103-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Total Xylenes	10	U

FORM I VOA

OLM03.0

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

COC0013
EPA SAMPLE NO

HQ936

Lab Name: IEA-NJ Contract: 68D50011

Lab Code: IEANJ Case No.: 24569 SAS No: SDG No: HQ931

Matrix (soil/water): Water Lab Sample ID: 61422011

Sample wt/vol: 5 (g/mL) ml Lab File ID: A8086

Level: (low/med) LOW Date Received: 04/12/96

% Moisture, not dec. Date Analyzed: 04/17/96

GC Column: RTX-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

Number TICs Found: 0

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/l

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.				
02.				
03.				
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

000016
EPA SAMPLE NO

HQ937

Lab Name. IEA-NJ

Contract: 63D50011

Lab Code IEANJ

Case No. 24569

SAS No.

SDG No

HQ931

Matrix. (soil/water) Water

Lab Sample ID. 61422010

Sample wt/vol: 3 (g/mL) ml

Lab File ID: A3085

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture not dec.

Date Analyzed: 04/17/96

GC Column: RTX-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/l

Q

74-37-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethane	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethane (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
55-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-37-5	1,2-Dichloropropane	10	U
10051-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-45-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10051-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
108-88-3	Toluene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Total Xylenes	10	U

FORM I VOA

OLM03.0

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IE
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

HQ937

Lab Name: IEA-NJ

Contract: 68D50011

Lab Code: IEANJ

Case No.: 24569

SAS No.

SDG No.: HQ931

Matrix: (soil/water) Water

Lab Sample ID 61422010

Sample wt/vol: 5 (g/mL) ml

Lab File ID: A8085

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: not dec. _____

Date Analyzed: 04/17/96

GC Column: RTX-624 ID: 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs Found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/l

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01				
02				
03				
04				
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FORM I VOA-TIC

OLM03 0

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

HQ938

Lab Name. IEA-NJ

Contract 63D50011

Lab Code. IEANJ Case No. 24563 SAS No. SDG No. HQ931

Matrix (soil/water) Soil

Lab Sample ID. 61422012

Sample wt/vol: 5 (g/mL) g

Lab File ID: A8127

Level. (low/med) LOW

Date Received: 04/12/96

% Moisture: not dec. 35

Date Analyzed: 04/18/96

GC Column: RTX-624 ID. 0.53 (mm)

Dilution Factor: 1.0

Soil Extract Volume: (uL)

Soil Aliquot Volume: (uL)

CAS NO.

COMPOUND

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/kg

Q

74-37-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	15	U
67-64-1	Acetone	15	U
75-15-0	Carbon Disulfide	15	U
75-35-4	1,1-Dichloroethene	15	U
75-34-3	1,1-Dichloroethane	15	U
540-59-0	1,2-Dichloroethene (total)	15	U
67-55-3	Chloroform	15	U
107-06-2	1,2-Dichloroethane	15	U
78-93-3	2-Butanone	15	U
71-55-6	1,1,1-Trichloroethane	15	U
56-23-5	Carbon Tetrachloride	15	U
75-27-4	Bromodichloromethane	15	U
78-87-5	1,2-Dichloropropane	15	U
10061-01-5	cis-1,3-Dichloropropene	15	U
79-01-6	Trichloroethene	15	U
124-48-1	Dibromochloromethane	15	U
79-00-5	1,1,2-Trichloroethane	15	U
71-43-2	Benzene	15	U
10061-02-6	Trans-1,3-Dichloropropene	15	U
75-25-2	Bromoform	15	U
103-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	15	U
103-88-3	Toluene	15	U
79-34-5	1,1,2,2-Tetrachloroethane	15	U
103-90-7	Chlorobenzene	15	U
100-41-4	Ethylbenzene	15	U
100-42-5	Styrene	15	U
1330-20-7	Total Xylenes	15	U

FORM 1-VOA

OLM03.0

TC 6/10/96

000071

EPA SAMPLE NO.

13
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

HQ938

Lab Name IEA-NJContract 63DS0011Lab Code IEANJCase No. 24569SAS No. SDG No. HQ931Matrix (soil/water) SoilLab Sample ID: 61422012Sample wt/vol. 5 (g/mL) gLab File ID. A3127Level (low/med) LOWDate Received: 04/12/96% Moisture, not dec. 35Date Analyzed: 04/18/96GC Column: RTX-624 ID: 0.53 (mm)Dilution Factor: 1.0Soil Extract Volume: (uL)Soil Aliquot Volume. (uL)Number TICs Found 0

CONCENTRATION UNITS:

-(ug/L or ug/Kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01				
02				
03				
04				
05				
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FORM 1 VOA-TIC

OLM03 0

13
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA 806-1-73

HQ931

Lab Name: IEA-NJ Contract: 66D53011

Lab Code: IEANJ Case No: 24569 SAS No: SDG No: HQ931

Matrix (soil/water): Water Lab Sample ID: 61422001

Sample wt/vol: 1000 (g/mL) ml Lab File ID: H2145

Level (low/med): LOW Date Received: 04/12/96

% Moisture: decanted: (Y/N) Date Extracted: 04/16/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/96

Injection Volume: 2 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO COMPOUND CONCENTRATION UNITS.
(ug/L or ug/Kg) ug/l Q

103-95-2	Phenol	10	U
111-44-4	Bis(2-Chloroethyl) Ether	10	U
95-57-3	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
103-60-1	2,2'-Oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitrosodi-N-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
73-59-1	Isopropene	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	Bis(2-Chloroethoxy) Methane	10	U
120-33-2	2,4-Dichlorophenol	10	U
120-32-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-56-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylnaphthalene	10	U
208-96-3	Acenaphthylene	10	U
506-20-2	2,6-Dinitrotoluene	10	U
59-09-2	3-Nitroaniline	25	U
63-32-9	Acenaphthene	10	U

FORM I SV-1

OLM03.0

TC 6/2/96

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000154
EPA SAMPLE NO. 4

HQ931

Lab Name IEA-NJ Contract 68D50011

Lab Code IEANJ Case No 24569 SAS No. SDG No. HQ931

Matrix: (soil/water) Water Lab Sample ID: 61422001

Sample wt/vol 1000 (g/mL) ml Lab File ID: H2145

Level: (low/med) LOW Date Received: 04/12/96

% Moisture: decanted: (Y/N) Date Extracted 04/16/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/96

Injection Volume: 2 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS.
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	CONCENTRATION UNITS. (ug/L or ug/Kg) <u>ug/L</u>	Q
51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorobenzyl-Phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (I)	10	U
101-55-3	4-Bromobenzyl-Phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
85-74-8	Carbazole	10	U
84-74-2	Di-N-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-63-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl) Phthalate	10	U
117-84-0	Di-N-Octylphthalate	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-03-9	Benzo(K)Fluoranthene	10	U
50-32-3	Benzo(A)Pyrene	10	U
193-39-5	Indeno(1,2,3-Cd)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

FORM I SV-2

OLM03.0

000155

17
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

HQ931

Lab Name. IEA-NJ

Contract: 68D50011

Lab Code IEANJ

Case No. 24569

SAS No.

SDG No. HQ931

Matrix (soil/water) Water

Lab Sample ID 61422001

Sample wt/vol 1000 (g/mL) ml

Lab File ID. H2145

Level. (low/med) LOW

Date Received. 04/12/96

% Moisture decanted: (Y/N)

Date Extracted. 04/16/96

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 04/19/96

Injection Volume: 2 (uL)

Dilution Factor: 1 0

GPC Cleanup: (Y/N) N pH:

Number TICs Found 5

CONCENTRATION UNITS

(ug/L or ug/Kg) ug/l

CAS NUMBER	COMPOUND NAME	RT	EST. CONC	Q
01	Unknown	18.44	5	J
02	Unknown	21.04	3	J
03	Unknown Alcohol	19.87	2	J
04	Unknown	20.15	2	J
05	Unknown Alcohol	16.50	2	J
06				
07				
08				
09				
10				
11				
12				
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000116
EPA SAMPLE NO

HQ932

Lab Name: IEA-NJ

Contract: 66D50011

Lab Code: IEANJ

Case No

24569

SAS No.

SDG No

HQ931

Matrix: (soil/water) Soil

Lab Sample ID: 61422004

Sample wt/vol: 30 (g/mL) g

Lab File ID: H2160

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: 24 decanted (Y/N) Y

Date Extracted: 04/17/96

Concentrated Extract Volume 500 (uL)

Date Analyzed: 04/22/96

Injection Volume: 2 (uL)

Dilution Factor: 1 0

GPC Cleanup: (Y/N) Y pH: 7.82

CAS NO

COMPOUND

CONCENTRATION UNITS

(ug/L or ug/Kg) ug/kg

Q

108-95-2	Phenol	430	U
111-44-4	Bis(2-Chloroethyl) Ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
521-64-7	N-Nitrosodi-N-Propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-57-9	2,4-Dimethylphenol	430	U
111-91-1	Bis(2-Chloroethoxy) Methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-3	4-Chloroaniline	430	U
67-58-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-Methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
93-05-2	2,4,5-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-53-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylnthalate	430	U
208-96-3	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	430	U

05

FORM I SV-1

OLM03 0

TC 6/2/96

10
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

000165

HQ932

Lab Name IEA-NJ Contract 68D50011

Lab Code IEANJ Case No. 24569 SAS No. SDG No HQ931

Matrix: (soil/water) Soil

Lab Sample ID: 61422004

Sample wt/vol. 30 (g/mL) g

Lab File ID: H2160

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: 24 decanted. (Y/N) N

Date Extracted: 04/17/96

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 04/22/96

Injection Volume: 2 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.82

CAS NO. COMPOUND

CONCENTRATION UNITS.

(ug/L or ug/Kg) ug/kg

Q

51-23-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl-Phenyl Ether	430	U
85-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-Methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	430	U
101-55-3	4-Bromophenyl-Phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-36-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	44	J
120-12-7	Anthracene	430	U
86-74-8	Carbazole	430	U
84-74-2	Di-N-Butylphthalate	430	U
206-44-0	Fluoranthene	86	J
129-00-0	Pyrene	430	U
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(A)Anthracene	430	U
218-01-9	Chrysene	54	J
117-81-7	Bis(2-Ethylhexyl) Phthalate	44	J
117-84-0	Di-N-Octylphthalate	430	U
205-99-2	Benzo(B)Fluoranthene	53	J
207-08-9	Benzo(K)Fluoranthene	430	U
50-32-3	Benzo(A)Pyrene	430	U
193-39-5	Indeno(1,2,3-Cd)Pyrene	430	U
53-70-3	Dibenz(A,H)Anthracene	430	U
191-24-2	Benzo(G,H,I)Perylene	430	U

FORM I SV-2

OLM03.0

000100

15
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

HQ932

Lab Name. IEA-NJ

Contract. 68D50011

Lab Code. IEANJ

Case No

24569

SAS No

SDG No

HQ931

Matrix (soil/water) Soil

Lab Sample ID 61422004

Sample wt/vol. 30 (g/mL) g

Lab File ID. H2160

Level: (low/med) LOW

Date Received. 04/12/96

% Moisture. 24 decanted: (Y/N) N

Date Extracted. 04/17/96

Concentrated Extract Volume 500 (uL)

Date Analyzed. 04/22/96

Injection Volume. 2 (uL)

Dilution Factor: 1.0

GPC Cleanup. (Y/N) Y

pH 7.82

Number TICs Found: 5

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Aldol Condensation Product	4.25	7700	JAB
02	Unknown	3.82	1100	JB
03	Unknown	5.06	740	J
04	Unknown	16.30	290	J
05	Unknown Acid	18.24	190	J
06				
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15
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

606175
EPA SAMPLE NO.

HQ933

Lab Name IEA-NJ Contract 63050011

Lab Code IEANJ Case No. 24562 SAS No. SDG No HQ933

Matrix (soil/water) Water Lab Sample ID 61422007

Sample wt/vol: 1000 (g/mL) ml Lab File ID: H2148

Level (low/med) LOW Date Received 04/12/96

% Moisture. decanted. (Y/N) Date Extracted 04/16/96

Concentrated Extract Volume 1000 (uL) Date Analyzed 04/19/96

Injection Volume: 2 (uL) Dilution Factor 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO	COMPOUND	CONCENTRATION UNITS. (ug/L or ug/Kg) <u>ug/l</u>	Q
103-95-2	Phenol	10	U
111-44-4	Bis(2-Chloroethyl) Ether	10	U
95-57-3	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-43-7	2-Methylphenol	10	U
103-60-1	2,2'-Oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitrosodi-N-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
93-93-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
93-75-3	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	Bis(2-Chloroethoxy) Methane	10	U
120-33-2	2,4-Dichlorophenol	10	U
120-32-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Napthalene	10	U
105-47-3	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-30-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnapthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-05-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-59-7	2-Chloronapthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylnthalate	10	U
208-36-3	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

FORM 1 SV-1

OLM03 0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000179
EPA SAMPLE NO

HQ933

Lab Name: IEA-NJ Contract: 63D50011
Lab Code: IEANJ Case No: 24569 SAS No: SDG No: HQ931
Matrix (soil/water): Water Lab Sample ID: 61422007
Sample wt/vol: 1000 (g/mL) mL Lab File ID: H2148
Level: (low/med): LOW Date Received: 04/12/96
% Moisture: decanted: (Y/N) Date Extracted: 04/16/96
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/96
Injection Volume: 2 (uL) Dilution Factor: 1 0
GPC Cleanup: (Y/N) N pH: _____

CAS NO. COMPOUND CONCENTRATION UNITS
(ug/L or ug/Kg) ug/l Q

51-28-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-Phenyl Ether	10	U
85-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	U
96-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-Phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
37-86-5	Pentachlorophenol	25	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
85-74-8	Carbazole	10	U
84-74-2	Di-N-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-63-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-N-Octylphthalate	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
50-32-8	Benzo(A)Pyrene	10	U
193-39-5	Indeno(1,2,3-Cd)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

FORM I SV-2

OLMC3 0

TC 6/12/96

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

HQ933

Lap Name IEA-NJ Contract 68D52011

Lap Code IEANJ Case No 24569 SAS No. SDG No. HQ931

Matrix: (soil/water) Water

Lap Sample ID 61422007

Sample wt/vol. 1000 (g/mL) ml

Lab File ID H2148

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: decanted: (Y/N)

Date Extracted: 04/16/96

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 04/19/96

Injection Volume: 2 (uL)

Dilution Factor: 1.0

GPC Cleanup (Y/N) N pH:

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/l

Number TICs Found: 1

CAS NUMBER	COMPOUND NAME	RT	EST CONC	Q
01.	Unknown Alcohol	21 25	4	J
02.				
03.				
04.				
05.				
06.				
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000153

13
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

HQ934

Lab Name IEA-NJ

Contract 69D50011

Lab Code IEANJ

Case No 24559

SAS No

SDG No HQ931

Matrix: (soil/water) Soil

Lab Sample ID 61422038

Sample wt/vol 30 (g/mL) g

Lab File ID H2153

Level: (low/med) LOW

Date Received 04/12/96

% Moisture: 21 decanted: (Y/N) N

Date Extracted 04/17/96

Concentrated Extract Volume 500 (uL)

Date Analyzed 04/22/96

Injection Volume: 2 (uL)

Dilution Factor 1 0

GPC Cleanup: (Y/N) Y pH 8 22

CAS NO. COMPOUND

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/kg

Q

108-95-2	Phenol	420	U
111-44-4	Bis(2-Chloroethyl) Ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methoxyphenol	420	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	420	U
106-44-5	4-Methoxyphenol	420	U
621-64-7	N-Nitrosodi-N-Propylamine	420	U
57-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethoxyphenol	420	U
111-91-1	Bis(2-Chloroethoxy) Methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Napthalene	420	U
106-47-3	4-Chloroaniline	420	U
87-68-3	Hexachlorocyclopentadiene	420	U
59-50-7	4-Chloro-3-Methoxyphenol	420	U
91-57-6	2-Methoxynapthalene	420	U
77-47-4	Hexachlorocyclohexadiene	420	U
33-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-55-7	2-Chloronapthalene	420	U
33-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethoxynapthalene	420	U
203-96-8	Acenaphthylene	420	U
506-20-2	2,6-Dinitrotoluene	420	U
99-09-2	5-Nitroaniline	1000	U
83-32-9	Acenaphthene	420	U

FORM I SV-1

OLM03 0

000156

 1C
 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

HQ934

Lab Name IEA-NJ

Contract 88D50011

Lab Code IEANJ

Case No

24569

SAS No

SDG No.

HQ931

Matrix: (soil/water) Soil

Lab Sample ID 61422003

Sample wt/vol. 30 (g/mL) g

Lab File ID H2163

Level. (low/med) LOW

Date Received: 04/12/96

% Moisture. 21 decanted. (Y/N) N

Date Extracted: 04/17/96

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 04/22/96

Injection Volume. 2 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH 8.22

CAS NO. COMPOUND

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/kg

Q

51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U
84-56-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl Phenyl Ether	420	U
36-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-Methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	420	U
101-55-3	4-Bromophenyl Phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
37-86-5	Pentachlorophenol	1000	U
35-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
86-74-8	Carbazole	420	U
34-74-2	Di-N-Butylphthalate	420	U
206-44-0	Fluoranthene	420	U
129-00-0	Pyrene	420	U
55-63-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo (A) Anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	Bis (2-Ethylhexyl) Phthalate	420	U
117-84-0	Di-N-Octylphthalate	420	U
205-99-2	Benzo (B) Fluoranthene	420	U
207-08-9	Benzo (K) Fluoranthene	420	U
50-32-8	Benzo (A) Pyrene	420	U
193-39-5	Indeno (1,2,3-Cd) Pyrene	420	U
53-70-3	Dibenz (A, H) Anthracene	420	U
191-24-2	Benzo (G, H I) Perylene	420	U

FORM I SV-2

OLM03 0

000157

17
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

HQ934

Lab Name IEA-NJ

Contract 63D50011

Lab Code IEANJ

Case No. 24569

SAS No.

SDG No

HQ931

Matrix. (soil/water) Soil

Lab Sample ID 61422008

Sample wt/vol: 30 (g/mL) g

Lab File ID. H2153

Level (low/med) LOW

Date Received 04/12/95

% Moisture 21 decanted: (Y/N) N

Date Extracted 04/17/95

Concentrated Extract Volume: 500 (uL)

Date Analyzed 04/22/95

Injection Volume 2 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 8.22

CONCENTRATION UNITS.

(ug/L or ug/Kg) ug/kg

Number TICs Found: 4

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01.	Aldol Condensation Product	4.27	11000	JAB
02	Unknown	3.84	1700	JB
03	Unknown	5.07	1100	J
04	Unknown	16.81	350	J
05				
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FORM I SV-TIC

OLM03 0

13
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

000197

EPA SAMPLE NO

HQ935

Lab Name: IEA-NJ Contract: 68D51311

Lab Code: IEANJ Case No: 24569 SAS No: SDG No: HQ931

Matrix: (soil/water) Water Lab Sample ID: 61422009

Sample wt/vol: 1000 (g/mL) ml Lab File ID: H2149

Level: (low/med) LOW Date Received: 04/12/96

% Moisture: Decanted: (Y/N) Date Extracted: 04/16/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/96

Injection Volume: 2 (uL) Dilution Factor: 10

GPC Cleanup (Y/N) N pH

CONCENTRATION UNITS:

CAS NO COMPOUND (ug/L or ug/Kg) ug/l Q

108-95-2	Phenol	10	U
111-44-4	Bis(2-Chloroethyl) Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-Oxybis(1-Chloropropane)	10	U
105-44-5	4-Methylphenol	10	U
621-64-7	N-Nitrosodi-N-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
93-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	Bis(2-Chloroethoxy) Methane	10	U
120-33-2	2,4-Dichlorophenol	10	U
120-32-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
105-47-3	4-Chloroaniline	10	U
67-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
83-06-2	2,4,5-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylnthalate	10	U
203-96-8	Acenaphthylene	10	U
605-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
63-32-9	Acenaphthene	10	U

FORM I SV-1

OLMC3 0

10
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

HQ935

Lab Name IEA-NJ

Contract: 66D50011

Lab Code: IEANJ

Case No. 24562

SAS No.

SDG No. HQ935

Matrix. (soil/water) Water

Lab Sample ID 61422009

Sample wt/vol 1000 (g/mL) ml

Lab File ID: H2142

Level. (low/med) LOW

Date Received 04/12/96

% Moisture. decanted (Y/N)

Date Extracted: 04/15/96

Concentrated Extract Volume 1000 (uL)

Date Analyzed 04/19/96

Injection Volume: 2 (uL)

Dilution Factor: 1.0

GPC Cleanup. (Y/N) N pH:

CAS NO.

COMPOUND

CONCENTRATION UNITS

(ug/L or ug/Kg) ug/l

Q

51-28-5	2,4-Dinitrophenol	25	U	UT
100-02-7	4-Nitrophenol	25	U	
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-56-2	Diethylphthalate	10	U	
7005-72-3	4-Chlorophenyl-Phenyl Ether	10	U	
86-73-7	Fluorene	10	U	
100-01-6	4-Nitroaniline	25	U	
534-52-1	4,6-Dinitro-2-Methylphenol	25	U	
86-30-6	N-Nitrosodiphenylamine (1)	10	U	
101-55-3	4-Bromophenyl-Phenylether	10	U	UT
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	25	U	
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
86-74-8	Carbazole	10	U	
84-74-2	Di-N-Butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
91-94-1	3,3'-Dichlorobenzidine	10	U	UT
56-55-3	Benzo(A)Anthracene	10	U	
218-01-9	Chrysene	10	U	
117-81-7	Bis(2-Ethylhexyl) Phthalate	10	U	
117-84-0	Di-N-Octylphthalate	10	U	
205-99-2	Benzo(B)Fluoranthene	10	U	
207-03-9	Benzo(K)Fluoranthene	10	U	
50-32-3	Benzo(A)Pyrene	10	U	
193-39-5	Indeno(1,2,3-Cd)Pyrene	10	U	
53-70-3	Dibenz(A,H)Anthracene	10	U	
191-24-2	Benzo(G,H,I)Perylene	10	U	

FORM I SV-2

OLM03 0

17
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000139
EPA SAMPLE NO.

HQ935

Lab Name IEA-NU Contract 69D50011

Lab Code IEANJ Case No 24562 SAS No. SDG No. HQ931

Matrix (soil/water) Water Lab Sample ID: 61422009

Sample wt/vol: 1000 (g/mL) ml Lab File ID: H2149

Level (Low/med) LOW Date Received: 04/12/96

% Moisture: decanted: (Y/N) Date Extracted: 04/16/96

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 04/19/96

Injection Volume: 2 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs Found: 2

CONCENTRATION UNITS
(ug/L or ug/Kg) ug/l

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
01	Unknown Alcohol	18 44	5	J
02	Unknown Alcohol	16 50	2	J
03				
04				
05				
06				
07				
08				
09				
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000207

 13
 SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

HQ936

Lab Name IEA-NJ Contract 66D50011
 Lab Code IEANJ Case No 24553 SAS No SDG No HQ931
 Matrix (soil/water) Water Lab Sample ID 61422011
 Sample wt/vol 1000 (g/TL) ml Lab File ID H2150
 Level (low/high) LOW Date Received 04/12/96
 % Moisture decanted (Y/N) Date Extracted 04/16/96
 Concentrated Extract Volume 1000 (uL) Date Analyzed 04/19/96
 Injection Volume 2 (uL) Dilution Factor 1.0
 GPC Cleanup (Y/N) N pH

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/L

CAS NO

COMPOUND

Q

103-95-2	Phenol	10	U
111-44-4	Bis(2-Chloroethoxy) Ether	10	U
95-57-3	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
103-60-1	2,2'-Oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitrosodi-N-Propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
38-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	Bis(2-Chloroethoxy) Methane	10	U
120-33-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-3	4-Chloroaniline	10	U
67-66-3	Hexachlorocyclopentadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
83-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	25	U
91-55-7	2-Chloronaphthalene	10	U
38-74-4	2-Nitroaniline	25	U
131-11-3	Dimethylnaphthalene	10	U
208-95-8	Acenaphthylene	10	U
506-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	25	U
83-32-9	Acenaphthene	10	U

FORM 1 SV-1

OLM03 3

TC 4/12/96

1C
SEMI-VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

HQ936

Lab Name: IEA-NJ

Contract 68D51011

Lab Code IEANJ

Case No

24569

SAS No.

SDG No

HQ931

Matrix: (soil/water) Water

Lab Sample ID: 61422011

Sample wt/vol 1000 (g/mL) ml

Lab File ID: H2150

Level: (low/med) LOW

Date Received: 04/12/96

% Moisture: decanted. (Y/N)

Date Extracted: 04/16/96

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 04/19/96

Injection Volume: 2 (uL)

Dilution Factor: 1 0

GPC Cleanup (Y/N) N

pH:

CAS NO.

COMPOUND

CONCENTRATION UNITS.
(ug/L or ug/Kg) ug/l

Q

51-23-5	2,4-Dinitrophenol	25	U
100-02-7	4-Nitrophenol	25	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-86-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-Phenyl Ether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	25	U
534-52-1	4,6-Dinitro-2-Methylphenol	25	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-Phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	25	U
85-01-3	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-N-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-63-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(A)Anthracene	10	U
218-01-9	Chrysene	10	U
117-31-7	Bis(2-Ethylhexyl)Phthalate	10	U
117-84-0	Di-N-Octylphthalate	10	U
205-99-2	Benzo(B)Fluoranthene	10	U
207-08-9	Benzo(K)Fluoranthene	10	U
50-32-8	Benzo(A)Pyrene	10	U
193-39-5	Indeno(1,2,3-Cd)Pyrene	10	U
53-70-3	Dibenz(A,H)Anthracene	10	U
191-24-2	Benzo(G,H,I)Perylene	10	U

FORM 1 SV-2

OLM03 0

17
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

HQ936

Lab Name IEA-NJ Contract. 63D50011

Lab Code: IEANJ Case No 24569 SAS No. SDG No. HQ931

Matrix (soil/water) Water Lab Sample ID 61422011

Sample wt/vol. 1000 (g/mL) ml Lab File ID H2150

Level. (low/med) LOW Date Received: 04/12/96

% Moisture decanted (Y/N) Date Extracted 04/16/96

Concentrated Extract Volume 1000 (uL) Date Analyzed: 04/19/96

Injection Volume: 2 (uL) Dilution Factor: 1 0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS.
(ug/L or ug/Kg) ug/l

Number TICs Found: 7

CAS NUMBER	COMPOUND NAME	RT	EST CONC	Q
01	Unknown Alcohol	18.44	8	J
02	Unknown	16.50	4	J
03	Unknown	20.15	4	J
04	Unknown Alcohol	18.16	4	J
05	Unknown Alcohol	19.35	3	J
06	Unknown	21.25	2	J
07 301020	Unknown amide	21.03	2	JN
08				
09				
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15
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

HQ938

Lab Name: IEA-NC Contract: 63250011

Lab Code: IEANJ Case No. 24569 SAS No. SDG No HQ931

Matrix: (soil/water) Soil Lab Sample ID: 51422012

Sample wt/vol 30 (g/mL) g Lab File ID H2164

Level: (low/med) LOW Date Received: 04/12/96

% Moisture: 35 decanted: (Y/N) N Date Extracted: 04/17/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 04/22/96

Injection Volume: 2 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 8.07

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/kg

CAS NO.

COMPOUND

Q

103-95-2	Phenol	510	U
111-44-4	Bis(2'-Chloroethyl) Ether	510	U
95-57-8	2-Chlorophenol	510	U
541-73-1	1,3-Dichlorobenzene	510	U
106-46-7	1,4-Dichlorobenzene	510	U
95-50-1	1,2-Dichlorobenzene	510	U
95-48-7	2-Methylphenol	510	U
103-60-1	2,2'-Oxybis(1-Chloropropane)	510	U
106-44-5	4-Methylphenol	510	U
621-64-7	N-Nitrosodi-N-Propylamine	510	U
67-72-1	Hexachloroethane	510	U
98-95-3	Nitrobenzene	510	U
78-59-1	Isophorone	510	U
88-75-5	2-Nitrophenol	510	U
105-67-9	2,4-Dimethylphenol	510	U
111-91-1	Bis(2-Chloroethoxy) Methane	510	U
120-33-2	2,4-Dichlorophenol	510	U
120-32-1	1,2,4-Trichlorobenzene	510	U
91-20-3	Naphthalene	510	U
106-47-3	4-Chloroaniline	510	U
87-63-3	Hexachlorocyclopentadiene	510	U
59-50-7	4-Chloro-3-Methylphenol	510	U
91-57-6	2-Methylnaphthalene	510	U
77-47-4	Hexachlorocyclopentadiene	510	U
88-06-2	2,4,6-Trichlorophenol	510	U
95-95-4	2,4,5-Trichlorophenol	1300	U
91-55-7	2-Chloronaphthalene	510	U
88-74-4	2-Nitroaniline	1300	U
131-11-3	Dimethylphthalate	510	U
208-96-3	Acenaphthylene	510	U
606-20-2	2,6-Dinitrotoluene	510	U
99-09-2	3-Nitroaniline	1300	U
83-32-9	Acenaphthene	510	U

05.

FORM I SV-1

OLM03 0

TC 6/12/96

000215

10 EPA SAMPLE NO
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

HQ933

Lab Name: IEA-NJ Contract: 68D50011

Lab Code: IEANJ Case No.: 24559 SAS No.: _____ SDG No: HQ931

Matrix (soil/water): Soil Lab Sample ID: 61422012

Sample wt/vol: 30 (g/mL) g Lab File ID: H2164

Level (low/med): LOW Date Received: 04/12/96

% Moisture: 35 decanted. (Y/N) N Date Extracted: 04/17/96

Concentrated Extract Volume: 500 (uL) Date Analyzed: 04/22/96

Injection Volume: 2 (uL) Dilution Factor: 10

GPC Cleanup: (Y/N) Y pH: 8.07

CAS NO. COMPOUND CONCENTRATION UNITS
(ug/L or ug/Kg) ug/kg Q

51-23-5	2,4-Dinitrophenol	1300	U
100-02-7	4-Nitrophenol	1300	U
132-34-9	Dibenzofuran	510	U
121-14-2	2,4-Dinitrotoluene	510	U
84-66-2	Diethylphthalate	510	U
7005-72-3	4-Chlorophenyl-Phenyl Ether	510	U
85-73-7	Fluorene	510	U
100-01-6	4-Nitroaniline	1300	U
534-52-1	4,6-Dinitro-2-Methylphenol	1300	U
35-30-6	N-Nitrosodiphenylamine (1)	510	U
101-55-3	4-Bromophenyl-Phenylether	510	U
118-74-1	Hexachlorobenzene	510	U
87-86-5	Pentachlorophenol	1300	U
85-01-8	Phenanthrene	72	J
120-12-7	Anthracene	510	U
35-74-8	Carbazole	510	U
34-74-2	Di-N-Butylphthalate	510	U
206-44-0	Fluoranthene	510	U
129-00-0	Pyrene	510	U
35-55-7	Butylbenzylphthalate	510	U
91-94-1	3,3'-Dichlorobenzidine	510	U
55-55-3	Benzo(A)Anthracene	510	U
218-01-9	Chrysene	510	U
117-81-7	Bis(2-Ethylhexyl)Phthalate	510	U
117-84-0	Di-N-Octylphthalate	510	U
205-99-2	Benzo(B)Fluoranthene	510	U
207-03-9	Benzo(K)Fluoranthene	510	U
50-32-8	Benzo(A)Pyrene	510	U
193-39-5	Indeno(1,2,3-Cd)Pyrene	510	U
53-70-3	Dibenz(A,H)Anthracene	510	U
191-24-2	Benzo(G,H,I)Perylene	510	U

FORM I SV-2

OLM03 0

000010

17
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

HQ933

Lab Name: IEA-NJ

Contract 6SD50011

Lab Code: IEANJ

Case No. 24569

SAS No.

SDG No

HQ931

Matrix (soil/water) Soil

Lab Sample ID 61422012

Sample wt/vol. 30 (g/mL) g

Lab File ID H2164

Level: (low/red) LOW

Date Received: 04/12/96

% Moisture: 35 decanted: (Y/N) N

Date Extracted: 04/17/96

Concentrated Extract Volume. 500 (uL)

Date Analyzed: 04/22/96

Injection Volume: 2 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 8.07

Number TICs Found: 6

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/kg

CAS NUMBER	COMPOUND NAME	RT	EST CONC.	Q
01.	Aldol Condensation Product	4 23	5300	JAB
02.	Unknown	3 32	990	JB
03.	Unknown	5.07	540	J
04.	Unknown	23.27	420	J
05.	Unknown	15 31	400	J
06.	Unknown Acid	18 24	270	J
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 1D
 PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HQ931

Lab Name: IEA-NJ Contract: 68D50011Lab Code: IEANJ Case No.: 24569 SAS No.: SDG No.: HQ931Matrix: (soil/water): WATERLab Sample ID: 61422001Sample wt/vol: 970 (g/ml) mlLab File ID: D4BCLP88E 027Moisture: decanted: Date Received: 04/12/96Extraction: (SepF/Cont/Sonc) SEPFDate Extracted: 04/17/96Concentrated Extract Volume: 10000 (uL)Date Analyzed: 04/23/96Injection Volume: 1.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: Y

CAS NO.

COMPOUND

CONCENTRATION UNITS: Q
(ug/L or ug/Kg) UG/L

319-84-6	alpha-BHC	0.05	U
319-85-7	Beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Metnoxychlor	0.52	U
53494-70-5	Endrin Ketone	0.10	U
7421-93-4	Endrin Aldenylde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.2	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.1	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

US

US

FORM 1 PEST

OLM03.0

10/3/96

000345

ID
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HQ932

Lab Name: IEA-NJ Contract: 68D50011Lab Code: IEANJ Case No.: 24569 SAS No.: SDG No.: HQ931Matrix: (soil/water): SOILLab Sample ID: 61422004Sample wt/vol: 30 (g/ml) gLab File ID: D43CLP883E_014Moisture: 24 decanted: NDate Received: 04/12/96Extraction: (SepF/Cont/Sonc) SONCDate Extracted: 04/17/96Concentrated Extract Volume: 5000 (uL)Date Analyzed: 04/22/96Injection Volume: 1.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) Y pH: 7.8Sulfur Cleanup: Y

CAS NO.

COMPOUND

CONCENTRATION UNITS: Q
(ug/L or ug/Kg) UG/KG

319-84-6	alpha-BHC	2.2	U
319-85-7	Beta-BHC	2.2	U
319-86-8	delta-BHC	2.2	U
58-89-9	gamma-BHC (Lindane)	2.2	U
75-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	2.2	U
1024-57-3	Heptachlor Epoxide	2.2	U
959-99-8	Endosulfan I	2.2	U
60-57-1	Dieldrin	4.4	U
72-55-9	4,4'-DDE	4.4	U
72-20-8	Endrin	4.4	U
33213-65-9	Endosulfan II	4.4	U
72-54-8	4,4'-DDD	4.4	U
1031-07-8	Endosulfan Sulfate	4.4	U
50-29-3	4,4'-DDT	4.4	U
72-43-5	Methoxychlor	22	U
53494-70-5	Endrin Ketone	4.4	U
7421-93-4	Endrin Aldenylde	4.4	U
5103-71-9	alpha-Chlordane	2.2	U
5103-74-2	gamma-Chlordane	2.2	U
8001-35-2	Toxaphene	220	U
12674-11-2	Aroclor-1016	44	U
11104-23-2	Aroclor-1221	88	U
11141-16-5	Aroclor-1232	44	U
53459-21-9	Aroclor-1242	44	U
12672-29-6	Aroclor-1248	44	U
11097-69-1	Aroclor-1254	44	U
11096-82-5	Aroclor-1260	44	U

FORM 1 PEST

OLM03.0

000351

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

HQ933

Lab Name: IEA-NJ Contract: 63D50011Lab Code: IEANJ Case No.: 24559 SAS No : SDG No.: HQ931Matrix: (soil/water): WATERLab Sample ID: 61422007Sample wt/vol: 970 (g/ml) mlLab File ID: D43CLP88E 023Moisture: decanted: Date Received: 04/12/96Extraction: (Sep/Cont/Sonc) SEPFDate Extracted: 04/17/96Concentrated Extract Volume: 10000 (uL)Date Analyzed: 04/23/96Injection Volume: 1.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: Y

CAS NO. COMPOUND

CONCENTRATION UNITS: Q
(ug/L or ug/Kg) UG/L

319-84-6	alpha-BHC	0.05	U
319-85-7	Beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Metoxychlor	0.52	U
53494-70-5	Endrin Ketone	0.10	U
7421-93-4	Endrin Aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.2	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.1	U
11141-16-5	Aroclor-1232	1.0	U
53439-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1 PEST

OLM03 0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

G00358
EPA SAMPLE NO.
HQ934

Lab Name: IEA-NJ Contract: 68D50011
 Lab Code: IEANJ Case No.: 24569 SAS No.: SDG No.: HQ931
 Matrix: (soil/water): SOIL Lab Sample ID: 61422008
 Sample wt/vol: 30 (g/ml) g Lab File ID: D43CLP38E_021
 Moisture: 21 decanted: N Date Received: 04/12/96
 Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 04/17/96
 Concentrated Extract Volume: 5000 (uL) Date Analyzed: 04/23/96
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) Y pH: 8.2 Sulfur Cleanup: Y

CAS NO. COMPOUND CONCENTRATION UNITS: Q
(ug/L or ug/Kg) UG/KG

319-84-6	alpha-BHC	2.1	U
319-85-7	Beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U
75-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
1024-57-3	Heptachlor Epoxide	2.1	U
959-98-8	Endosulfan I	2.1	U
60-57-1	Dieldrin	4.2	U
72-55-9	4,4'-DDE	4.2	U
72-20-8	Endrin	4.2	U
33213-65-9	Endosulfan II	4.2	U
72-54-8	4,4'-DDD	4.2	U
1031-07-8	Endosulfan Sulfate	4.2	U
50-29-3	4,4'-DDT	4.2	U
72-43-5	Methoxychlor	21	U
53494-70-5	Endrin Ketone	4.2	U
7421-93-4	Endrin Aldenylde	4.2	U
5103-71-9	alpha-Chlordane	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
8001-35-2	Toxaphene	210	U
12674-11-2	Aroclor-1015	42	U
11104-28-2	Aroclor-1221	84	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12572-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

FORM 1 PEST

OLM03.0

TC 5/12/96

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

000363
EPA SAMPLE NO.
HQ935

Lab Name: IEA-NJ Contract: 68D50011
 Lab Code: IEANJ Case No.: 24569 SAS No.: SDG No.: HQ931
 Matrix: (soil/water): WATER Lab Sample ID: 61422009
 Sample wt/vol: 970 (g/ml) ml Lab File ID: D43CLP83E_024
 Moisture: decanted: Date Received: 04/12/96
 Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 04/17/96
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/23/96
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: Y

CAS NO. COMPOUND CONCENTRATION UNITS: Q
(ug/L or ug/Kg) UG/L

319-84-6	alpha-BHC	0.05	U
319-85-7	Beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
50-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin Ketone	0.10	U
7421-93-4	Endrin Aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.2	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.1	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1 PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

000005
EPA SAMPLE NO.
HQ936

Lab Name: IEA-NJ Contract: 68D50011
 Lab Code: IEANJ Case No.: 24569 SAS No.: _____ SDG No.: HQ931
 Matrix. (soil/water): WATER Lab Sample ID: 61422011
 Sample wt/vol: 970 (g/ml) ml Lab File ID: D43CLP883_025
 Moisture: _____ decanted: _____ Date Received: 04/12/96
 Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 04/17/96
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 04/23/96
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: Y

CAS NO. COMPOUND CONCENTRATION UNITS: Q
(ug/L or ug/Kg) UG/L

319-84-6	alpha-BHC	0.05	U
319-85-7	Beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
75-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor Epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan Sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.52	U
53494-70-5	Endrin Ketone	0.10	U
7421-93-4	Endrin Aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.05	U
5103-74-2	gamma-Chlordane	0.05	U
8001-35-2	Toxaphene	5.2	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	2.1	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1 PEST

OLM03.0

TC 6/13/96

000573

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

H0933

Lab Name: IEA-NJ Contract: 68D50011Lab Code: IEANJ Case No.: 24559 SAS No.: SDG No.: H0931Matrix: (soil/water): SOILLab Sample ID: 61422012Sample wt/vol: 30 (g/ml) gLab File ID: D4BCLP333E_022Moisture: 35 decanted: NDate Received: 04/12/96Extraction: (SepF/Cont/Sonc) SONCDate Extracted: 04/17/96Concentrated Extract Volume: 5000 (uL)Date Analyzed: 04/23/96Injection Volume: 1.0 (uL)Dilution Factor: 1.0GPC Cleanup: (Y/N) Y pH: 8.1Sulfur Cleanup: Y

CAS NO.

COMPOUND

CONCENTRATION UNITS: Q
(ug/L or ug/Kg) UG/KG

319-84-6	alpha-BHC	2.6	U
319-85-7	Beta-BHC	2.6	U
319-86-8	delta-BHC	2.0	J
58-89-9	gamma-BHC (Lindane)	2.6	U
76-44-8	Heptachlor	2.6	U
309-00-2	Aldrin	1.7	J
1024-57-3	Heptachlor Epoxide	2.6	U
959-98-8	Endosulfan I	2.6	U
60-57-1	Dieldrin	5.1	U
72-55-9	4,4'-DDE	5.1	U
72-20-8	Endrin	5.1	U
33213-65-9	Endosulfan II	5.1	U
72-54-8	4,4'-DDD	5.1	U
1031-07-8	Endosulfan Sulfate	5.1	U
50-29-3	4,4'-DDT	5.1	U
72-43-5	Methoxychlor	26	U
53494-70-5	Endrin Ketone	5.1	U
7421-93-4	Endrin Aldenhyde	5.1	U
5103-71-9	alpha-Chlordane	2.6	U
5103-74-2	gamma-Chlordane	2.6	U
8001-35-2	Toxaphene	260	U
12674-11-2	Aroclor-1015	51	U
11104-28-2	Aroclor-1221	100	U
11141-16-5	Aroclor-1232	51	U
53469-21-9	Aroclor-1242	51	U
12672-29-6	Aroclor-1243	51	U
11097-69-1	Aroclor-1254	51	U
11096-82-5	Aroclor-1260	51	U

FORM 1 PEST

OLM03.C

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= THE DURANGO LEAD SMELTER SITE (TDD#9602-0001)

HYDROLOGIC LABORATORIES, INC

Sample Cross Reference Table

Company Name: URS Consultants

HydroLogic Login Number: L2695

HydroLogic Sample Number	Client Sample Identification	Sample Date/Time
L2695-1	DC-SW-5	09 Apr 96 12:35
L2695-2	DC-SW-4	09 Apr 96 12:35
L2695-3	DC-SW-3	09 Apr 96 13:20
L2695-4	DC-SW-1 MS/MSD	09 Apr 96 16:45
L2695-5	DC-SW-3	09 Apr 96 13:20
L2695-6	DC-SW-4	09 Apr 96 12:35
L2695-7	DC-SW-2	09 Apr 96 14:00
L2695-8	DC-SW-1	09 Apr 96 16:45
L2695-9	DC-SW-5	09 Apr 96 12:35
L2695-10	DC-SW-1	09 Apr 96 16:45
L2695-11	DC-SW-2	09 Apr 96 14:00
L2695-12	DC-SW-1 MS/MSD	09 Apr 96 16:45
L2695-13	LC-SW-1	10 Apr 96 11:00
L2695-14	LC-SW-1	10 Apr 96 11:00
L2695-15	DL-SW-1 MS/MSD	10 Apr 96 10:20
L2695-16	DL-SW-3	09 Apr 96 17:20
L2695-17	DL-SW-1	10 Apr 96 10:20
L2695-18	DL-SW-1	10 Apr 96 10:20
L2695-19	DL-SW-1	10 Apr 96 10:20
L2695-20	DL-SW-4	09 Apr 96 16:45
L2695-21	DL-SW-2	09 Apr 96 18:20
L2695-22	DL-SW-4	09 Apr 96 16:45
L2695-23	DL-SW-3	09 Apr 96 17:20
L2695-24	DL-SW-2	09 Apr 96 18:20
L2695-25	DL-SW-5	09 Apr 96 16:45
L2695-26	DL-SW-5	09 Apr 96 16:45

DATE AND TIME SUMMARY

Company Name: URS Consultants
Project: DURANGO CU

HydroLogic Login Number: L2695

METHOD	COLLECTED	PREPARED	ANALYZED
SAMPLE NUMBER: L2695-1	CLIENT ID: DC-SW-5		MATRIX: Aqueous
MCAWW, 130 2	04/09/96 12:35	04/16/96	04/16/96 10:17
SAMPLE NUMBER: L2695-2	CLIENT ID: DC-SW-4		MATRIX: Aqueous
MCAWW, 130 2	04/09/96 12:35	04/16/96	04/16/96 10:17
SAMPLE NUMBER: L2695-3	CLIENT ID: DC-SW-3		MATRIX: Aqueous
MCAWW, 130.2	04/09/96 13 20	04/16/96	04/16/96 10 17
SAMPLE NUMBER: L2695-4	CLIENT ID: DC-SW-1 MS/MSD		MATRIX: Aqueous
MCAWW, 415 1	04/09/96 16 45	04/16/96	04/16/96 09:25
SAMPLE NUMBER: L2695-5	CLIENT ID: DC-SW-3		MATRIX: Aqueous
MCAWW, 415 1	04/09/96 13 20	04/16/96	04/16/96 09 25
SAMPLE NUMBER: L2695-6	CLIENT ID: DC-SW-4		MATRIX: Aqueous
MCAWW, 415 1	04/09/96 12:35	04/16/96	04/16/96 09 25
SAMPLE NUMBER: L2695-7	CLIENT ID: DC-SW-2		MATRIX: Aqueous
MCAWW, 415 1	04/09/96 14 00	04/16/96	04/16/96 09:25
SAMPLE NUMBER: L2695-8	CLIENT ID: DC-SW-1		MATRIX: Aqueous
MCAWW, 415 1	04/09/96 16:45	04/16/96	04/16/96 09 25
SAMPLE NUMBER: L2695-9	CLIENT ID: DC-SW-5		MATRIX: Aqueous
MCAWW, 415 1	04/09/96 12:35	04/16/96	04/16/96 09 25
SAMPLE NUMBER: L2695-10	CLIENT ID: DC-SW-1		MATRIX: Aqueous
MCAWW, 130 2	04/09/96 16:45	04/16/96	04/16/96 10 17
SAMPLE NUMBER: L2695-11	CLIENT ID: DC-SW-2		MATRIX: Aqueous
MCAWW, 130 2	04/09/96 14:00	04/16/96	04/16/96 10 17

DATE AND TIME SUMMARY

Company Name: URS Consultants
Project: DURANGO CU

HydroLogic Login Number: L2695

METHOD	COLLECTED	PREPARED	ANALYZED
SAMPLE NUMBER: L2695-12	CLIENT ID: DC-SW-1 MS/MSD	MATRIX: Aqueous	
MCAWW, 130.2	04/09/96 16 45	04/16/96	04/16/96 10 17
SAMPLE NUMBER: L2695-13	CLIENT ID: LC-SW-1	MATRIX: Aqueous	
MCAWW, 415.1	04/10/96 11 00	04/16/96	04/16/96 09 25
SAMPLE NUMBER: L2695-14	CLIENT ID: LC-SW-1	MATRIX: Aqueous	
MCAWW, 130.2	04/10/96 11 00	04/16/96	04/16/96 10:17
SAMPLE NUMBER: L2695-15	CLIENT ID: DL-SW-1 MS/MSD	MATRIX: Aqueous	
MCAWW, 130.2	04/10/96 10:20	04/16/96	04/16/96 10 17
SAMPLE NUMBER: L2695-16	CLIENT ID: DL-SW-3	MATRIX: Aqueous	
MCAWW, 130.2	04/09/96 17 20	04/16/96	04/16/96 10 17
SAMPLE NUMBER: L2695-17	CLIENT ID: DL-SW-1	MATRIX: Aqueous	
MCAWW, 415.1	04/10/96 10:20	04/16/96	04/16/96 09:25
SAMPLE NUMBER: L2695-18	CLIENT ID: DL-SW-1	MATRIX: Aqueous	
MCAWW, 130.2	04/10/96 10:20	04/16/96	04/16/96 10 17
SAMPLE NUMBER: L2695-19	CLIENT ID: DL-SW-1	MATRIX: Aqueous	
MCAWW, 415.1	04/10/96 10:20	04/16/96	04/16/96 09 25
SAMPLE NUMBER: L2695-20	CLIENT ID: DL-SW-4	MATRIX: Aqueous	
MCAWW, 130.2	04/09/96 16 45	04/16/96	04/16/96 10:17
SAMPLE NUMBER: L2695-21	CLIENT ID: DL-SW-2	MATRIX: Aqueous	
MCAWW, 130.2	04/09/96 18:20	04/16/96	04/16/96 10:17
SAMPLE NUMBER: L2695-22	CLIENT ID: DL-SW-4	MATRIX: Aqueous	
MCAWW, 415.1	04/09/96 16 45	04/16/96	04/16/96 09 25
SAMPLE NUMBER: L2695-23	CLIENT ID: DL-SW-3	MATRIX: Aqueous	

DATE AND TIME SUMMARY

Company Name: URS Consultants
Project: DURANGO CU

HydroLogic Login Number: L2695

METHOD	COLLECTED	PREPARED	ANALYZED
MCAWW, 415.1	04/09/96 17:20	04/16/96	04/16/96 09:25
SAMPLE NUMBER: L2695-24	CLIENT ID: DL-SW-2		MATRIX: Aqueous
MCAWW, 415.1	04/09/96 18:20	04/16/96	04/16/96 09:25
SAMPLE NUMBER: L2695-25	CLIENT ID: DL-SW-5		MATRIX: Aqueous
MCAWW, 415.1	04/09/96 16:45	04/16/96	04/16/96 09:25
SAMPLE NUMBER: L2695-26	CLIENT ID: DL-SW-5		MATRIX: Aqueous
MCAWW, 130.2	04/09/96 16:45	04/16/96	04/16/96 10:17

FINAL
RESULTS

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: DL-SW-1 MS/MSD
Project Number: DURANGO CU
Sample ID: L2695-15
Site / Project ID: Not Reported
Run ID: R3540
Collection Date: 10-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAAW, Method 130.2							
Analysis Date: 16-APR-96 10:17							
Workgroup Number: WG6208							
Hardness	N/A	1	157	mg/L		1.7	2

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: DL-SW-1
Project Number: DURANGO CU
Sample ID: L2695-18
Site / Project ID: Not Reported
Run ID: R3540
Collection Date: 10-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWW, Method 130.2							
Analysis Date: 16-APR-96 10:17							
Workgroup Number: WG6208							
Hardness	N/A	1	159	mg/L		1.7	2

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: DL-SW-1
Project Number: DURANGO CU
Sample ID: L2695-17
Site / Project ID: Not Reported
Run ID: R3539
Collection Date: 10-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWW, Method 415.1							
Analysis Date: 16-APR-96 09:25							
Workgroup Number: WG6204							
Total Organic Carbon	N/A	1	2	mg/L		.15	1

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, S = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: DL-SW-1
Project Number: DURANGO CU
Sample ID: L2695-19
Site / Project ID: Not Reported
Run ID: R3539
Collection Date: 10-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWM, Method 415.1							
Analysis Date: 16-APR-96 09:25							
Workgroup Number: WG6204							
Total Organic Carbon	N/A	1	2.8	mg/L		.15	1

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: LC-SW-1
Project Number: DURANGO CU
Sample ID: L2695-14
Site / Project ID: Not Reported
Run ID: R3540
Collection Date: 10-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWM, Method 130.2							
Analysis Date: 16-APR-96 10:17							
Workgroup Number: WG6208							
Hardness	N/A	1	241	mg/L		1.7	2

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: LC-SW-1
Project Number: DURANGO CU
Sample ID: L2695-13
Site / Project ID: Not Reported
Run ID: R3539
Collection Date: 10-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWW, Method 415.1							
Analysis Date: 16-APR-96 09:25							
Workgroup Number: WG6204							
Total Organic Carbon	N/A	1	2.5	mg/L		.15	1

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: DL-SW-2
Project Number: DURANGO CU.
Sample ID: L2695-21
Site / Project ID: Not Reported
Run ID: R3540
Collection Date: 09-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAW, Method 130.2							
Analysis Date: 16-APR-96 10:17							
Workgroup Number: WG6208							
Hardness	N/A	1	184	mg/L		1.7	2

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: DL-SW-2
Project Number: DURANGO CU
Sample ID: L2695-24
Site / Project ID: Not Reported
Run ID: R3539
Collection Date: 09-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWW, Method 415.1							
Analysis Date: 16-APR-96 09:25							
Workgroup Number: WG6204							
Total Organic Carbon	N/A	1	2	mg/L		.15	1

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: DL-SW-3
Project Number: DURANGO CU
Sample ID: L2695-16
Site / Project ID: Not Reported
Run ID: R3540
Collection Date: 09-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWW, Method 130.2							
Analysis Date: 16-APR-96 10:17							
Workgroup Number: WG6208							
Hardness	N/A	1	186	mg/L		1.7	2

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: DL-SW-3
Project Number: DURANGO CU
Sample ID: L2695-23
Site / Project ID: Not Reported
Run ID: R3539
Collection Date: 09-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWW, Method 415.1							
Analysis Date: 16-APR-96 09:25							
Workgroup Number: WG6204							
Total Organic Carbon	N/A	1	1.7	mg/L		.15	1

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: DL-SW-4
Project Number: DURANGO CU
Sample ID: L2695-20
Site / Project ID: Not Reported
Run ID: R3540
Collection Date: 09-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWW, Method 130.2							
Analysis Date: 16-APR-96 10:17							
Workgroup Number: WG6208							
Hardness	N/A	1	192	mg/L	1.7		2

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: DL-SW-4
Project Number: DURANGO CU
Sample ID: L2695-22
Site / Project ID: Not Reported
Run ID: R3539
Collection Date: 09-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWW, Method 415.1							
Analysis Date: 16-APR-96 09:25							
Workgroup Number: WG6204							
Total Organic Carbon	N/A	1	2	mg/L		.15	1

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: Hydrologic Laboratories, Inc.

Client ID: DL-SW-5
Project Number: DURANGO CU
Sample ID: L2695-25
Site / Project ID: Not Reported
Run ID: R3539
Collection Date: 09-APR-96
Received Date: 12-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWW, Method 415.1							
Analysis Date: 16-APR-96 09:25							
Workgroup Number: WG6204							
Total Organic Carbon	N/A	1	3.8	mg/L		.15	1

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
 Prepared By: hydrologic Laboratories, Inc.

Client ID: DL-SW-5
 Project Number: DURANGO CU
 Sample ID: L2695-26
 Site / Project ID: Not Reported
 Run ID: R3540
 Collection Date: 09-APR-96
 Received Date: 12-APR-96
 Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWM, Method 130.2							
Analysis Date: 16-APR-96 10:17							
Workgroup Number: WG6208							
Hardness	N/A	1	188	mg/L		1.7	2

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
 - J = Estimated Concentration, B = Analyte Detected in the Blank
 - E = Analyte Conc. is above the Method Calibration Range
 Dil - Sample Dilution Factor
 ND - Sample Concentration Not Detected above MDL
 MDL - Method Detection Limit
 RL - Method Reporting Limit

QC
DATA
PACKAGE

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6208-1
Site / Project ID: Not Reported
Run ID: R3540
Collection Date: Not Reported
Received Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWW, Method 130.2							
Analysis Date: 16-APR-96 10:17							
Workgroup Number: WG6208							
Hardness	N/A	1	ND	mg/L	U	1.7	2

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6211-1
Site / Project ID: Not Reported
Run ID: R3540
Collection Date: Not Reported
Received Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
Standard Method 314A							
Analysis Date: 16-APR-96 10:17							
Workgroup Number: WG6211							
Hardness	N/A	1	ND	mg/L	U	1.7	2

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Form 1 - Data Summary Report
Prepared By: HydroLogic Laboratories, Inc.

Client ID: Method Blank
Project Number: Not Reported
Sample ID: WG6204-1
Site / Project ID: Not Reported
Run ID: R3539
Collection Date: Not Reported
Received Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Dil	Sample Conc.	Units	Qual	MDL	RL
MCAWM, Method 415.1							
Analysis Date: 16-APR-96 09:25							
Workgroup Number: WG6204							
Total Organic Carbon	N/A	1	ND	mg/L	U	.15	1

Review By: Bob Cathel

Report Approved By: Ty Garber

Qual - U = Analyte Not Detected above the Method Detection Limit
- J = Estimated Concentration, B = Analyte Detected in the Blank
- E = Analyte Conc. is above the Method Calibration Range
Dil - Sample Dilution Factor
ND - Sample Concentration Not Detected above MDL
MDL - Method Detection Limit
RL - Method Reporting Limit

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
Prepared By: Hydrologic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
Work Group Id: WG6208-2
Run Id: R3540
GALP Record Id: Not Reported
Preparation Date: 16-APR-96
Analysis Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
MCAWW, Method 130.2											
Analysis Date: 16-APR-96 10:17											
Workgroup Number: WG6208											
Hardness	N/A	80	120	20	311	311	mg/L	97	91	6	

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

(1) QUAL	- * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; ' ' = Value Within Control Limits
"Limits"	- The "Limits" reported above (Low, High and RPD) are in units of percent (%).
"LCS, SD Add"	- The conc. of analyte added to the LCS or LCSD sample.
"LCS %REC"	- Laboratory Control Sample Percent Recovery
"LCSD %REC"	- Laboratory Control Sample Duplicate Percent Recovery
"LCS/LCSD RPD"	- Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
NR	- Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
Work Group Id: WG6211-2
Run Id: R3540
GALP Record Id: Not Reported
Preparation Date: 16-APR-96
Analysis Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
Standard Method 314A											
Analysis Date: 16-APR-96 10:17											
Workgroup Number: WG6211											
Hardness	N/A	80	120	20	311	311	mg/L	97	91	6	

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

(1) QUAL	- * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; ' ' = Value Within Control Limits
"Limits"	- The "Limits" reported above (Low, High and RPD) are in units of percent (%).
"LCS,SD Add"	- The conc. of analyte added to the LCS or LCSD sample.
"LCS %REC"	- Laboratory Control Sample Percent Recovery
"LCSD %REC"	- Laboratory Control Sample Duplicate Percent Recovery
"LCS/LCSD RPD"	- Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
NR	- Not Reported

Laboratory Control Spike / Laboratory Control Spike Duplicate QC Report
Prepared By: HydroLogic Laboratories, Inc.

Sample Id: LCS/LCSD Pair
Work Group Id: WG6204-2
Run Id: R3539
GALP Record Id: Not Reported
Preparation Date: 16-APR-96
Analysis Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	LCS Add	LCSD Add	Units	LCS %REC	LCSD %REC	LCS/LCSD RPD	QUAL (1)
MCAWM, Method 415.1											
Analysis Date: 16-APR-96 09:25											
Workgroup Number: WG6204											
Total Organic Carbon	N/A	80	120	20	43.2	43.2	mg/L	99	99	0	---

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

(1) QUAL	- * = LCS Outside Control Limits; # = LCSD Outside Control Limits; @ = RPD Outside Control Limits; --- = Value Within Control Limits
"Limits"	- The "Limits" reported above (Low, High and RPD) are in units of percent (%).
"LCS,SD Add"	- The conc. of analyte added to the LCS or LCSD sample.
"LCS %REC"	- Laboratory Control Sample Percent Recovery
"LCSD %REC"	- Laboratory Control Sample Duplicate Percent Recovery
"LCS/LCSD RPD"	- Laboratory Control Sample / Laboratory Control Sample Duplicate Relative Percent Difference
NR	- Not Reported

Matrix Spike / Matrix Spike Duplicate QC Report
Prepared By: HydroLogic Laboratories, Inc.

Client Id: Not Reported
Work Group Id: WG6204-5
Run Id: R3539
GALP Record Id: Not Reported
Preparation Date: 16-APR-96
Analysis Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Low Limit	High Limit	RPD Limit	MS Add	MSD Add	Units	Sample Conc	MS %REC	MSD %REC	MS/MSD RPD	QUAL (1)
MCAW, Method 415.1												
Analysis Date: 16-APR-96 09:25												
Workgroup Number: WG6204												
Total Organic Carbon	N/A	75	125	20	16	16	mg/L	2.2	100	101	1	

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

(1) QUAL	- * = MS Outside Control Limits; # = MSD Outside Control Limits; @ = RPD Outside Control Limits; '-' = Value Within Control Limits
(1) QUAL	- ! = The sample concentration is greater than two times the MS or MSD spike conc. High analyte conc. will effect the MS/MSD recoveries.
"Limits"	- The "Limits" reported above (Low, High and RPD) are in units of percent (%).
"MS, MSD Add"	- The conc. of analyte added to the MS or MSD sample (soil results are corrected for % moisture).
"Sample Conc"	- The units are the same as those reported on the Form 1 Data Summary Report (soil results are corrected for % moisture).
"MS %REC"	- Matrix Spike Percent Recovery
"MSD %REC"	- Matrix Spike Duplicate Percent Recovery
"MS/MSD RPD"	- Matrix Spike / Matrix Spike Duplicate Relative Percent Difference
NR	- Not Reported
ND	- Analyte "Not Detected" above the method detection limit.

Replicate Sample QC Report
Prepared By: HydroLogic Laboratories, Inc.

Work Group Id: WG6208-4
Run Id: R3540
GALP Record Id: Not Reported
Preparation Date: 16-APR-96
Analysis Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Sample Conc	REP Conc	Units	RPD
MCAW, Method 130.2					
Analysis Date: 16-APR-96 10:17					
Workgroup Number: WG6208					
Hardness	N/A	186	190	mg/L	-2

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

Note	- Only analytes with concentrations above the method detection limit are reported above. Samples will be reported above without any analyte concentrations. For these samples, analytes were not detected in the sample or in the sample replicate.
"Sample Conc"	- The sample concentration.
"REP Conc"	- The replicate sample concentration.
"RPD"	- Relative percent difference
"ND"	- Not Detected

Replicate Sample QC Report
Prepared By: HydroLogic Laboratories, Inc.

Work Group Id: WG6208-5
Run Id: R3540
GALP Record Id: Not Reported
Preparation Date: 16-APR-96
Analysis Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Sample Conc	REP Conc	Units	RPD
MCAWW, Method 130.2					
Analysis Date: 16-APR-96 10:17					
Workgroup Number: WG6208					
Hardness	N/A	157	165	mg/L	5

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

Note	- Only analytes with concentrations above the method detection limit are reported above. Samples will be reported above without any analyte concentrations. For these samples, analytes were not detected in the sample or in the sample replicate.
"Sample Conc"	- The sample concentration.
"REP Conc"	- The replicate sample concentration.
"RPD"	- Relative percent difference
"ND"	- Not Detected

Replicate Sample QC Report
Prepared By: HydroLogic Laboratories, Inc.

Work Group Id: WG6211-4
Run Id: R3540
GALP Record Id: Not Reported
Preparation Date: 16-APR-96
Analysis Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Sample Conc	REP Conc	Units	RPD
Standard Method 314A					
Analysis Date: 16-APR-96 10:17					
Workgroup Number: WG6211					
Hardness	N/A	186	190	mg/L	2

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

Note	- Only analytes with concentrations above the method detection limit are reported above. Samples will be reported above without any analyte concentrations. For these samples, analytes were not detected in the sample or in the sample replicate.
"Sample Conc"	- The sample concentration.
"REP Conc"	- The replicate sample concentration.
"RPD"	- Relative percent difference
"ND"	- Not Detected

Replicate Sample QC Report
Prepared By: HydroLogic Laboratories, Inc.

Work Group Id: WG6204-4
Run Id: R3539
GALP Record Id: Not Reported
Preparation Date: 16-APR-96
Analysis Date: 16-APR-96
Report Date: 17-APR-96

Analyte	CAS No.	Sample Conc	REP Conc	Units	RPD
MCAMW, Method 415.1					
Analysis Date: 16-APR-96 09:25					
Workgroup Number: WG6204					
Total Organic Carbon	N/A	2.2	2	mg/L	10

Note:
Technical Review By: Bob Cathel

Note:
Report Approved By: Ty Garber

Note	- Only analytes with concentrations above the method detection limit are reported above. Samples will be reported above without any analyte concentrations. For these samples, analytes were not detected in the sample or in the sample replicate.
"Sample Conc"	- The sample concentration.
"REP Conc"	- The replicate sample concentration.
"RPD"	- Relative percent difference
"ND"	- Not Detected

APPENDIX B

Photolog

Color Photo(s)

The following pages
contain color that does
not appear in the
scanned images.

To view the actual images, please
contact the Superfund Records
Center at (303) 312-6473.



PHOTO 1

Looking upstream on the Animas River at Durango Lead Smelter sample location DL-SW/SE-4 (and DL-SW-5 duplicate). Note Santa Rita Bridge in background.



PHOTO 2

Photo of sample location DL-SW/SE-3 with the Santa Rita Bridge (Highway 550/160) in the background. Samples were collected at the west edge of Durango City Park (Gateway Park).

75-60201.00

\\START\\Durango\\Final-Pb.ARR\\Photolog:rsb

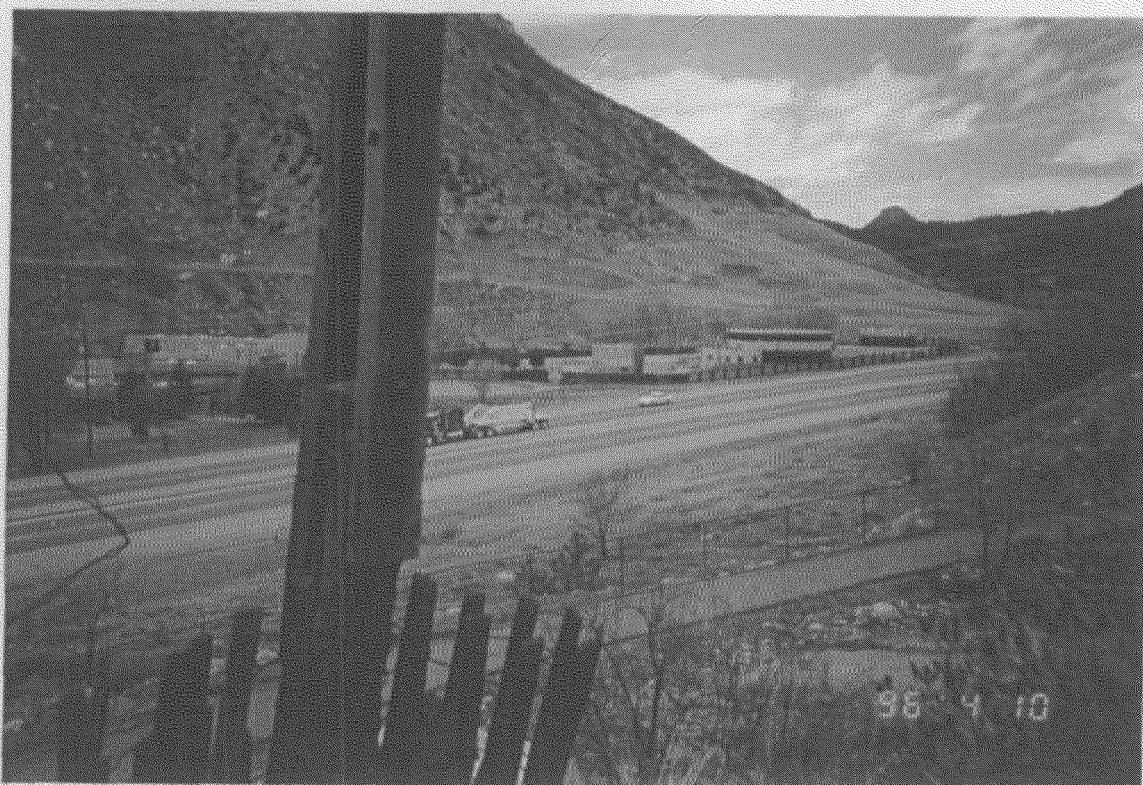


PHOTO 7

Photo taken from soil sample location DL-SO-2 facing the Durango Lead Smelter site beyond the waste treatment plant. Sample location at Trailer #8 at the trailer park.



PHOTO 8

Photo taken from the location of soil sample DL-SO-3 facing the Durango Lead Smelter site across the Animas River.

75-60201.00

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PHOTO 5

Photo of the location of sample LC-SW/SE-1 collected on the east bank of Lightner Creek upstream of the confluence with the Animas River. The bridge carries Highway 160 over Lightner Creek.



PHOTO 6

View of the Potter residence from the location of soil sample DL-SO-1.

75-60201.00

\\START\\Durango\\Final-Pb.ARR\\Photolog:rsb

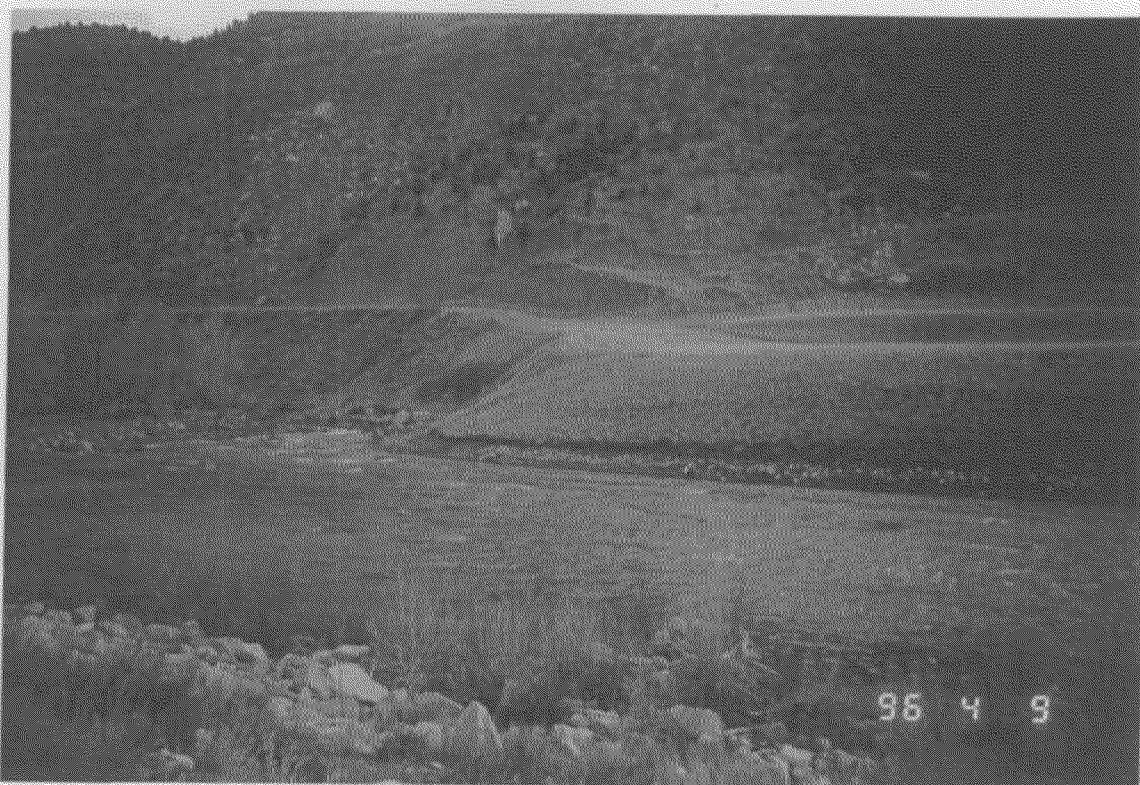


PHOTO 3

Photo of M. Rudolph (UOS) collecting PPE sample (DL-SW/SE-2) at the location of the former lead smelter on the west bank of the Animas River.



PHOTO 4

Photo taken facing south of sample location DL-SW/SE-1.
Roosa Avenue is in the right frame; Red Lion Inn is in left frame.

75-60201.00

\\START\\Durango\\Final-Pb.ARR\\Photolog:rsb

APPENDIX C

Site Inspection Data Summary

NA

TABLE AIR-1: SUMMARY OF ANALYTICAL RESULTS FOR AIR PATHWAY

SAMPLE ID & DATE	SAMPLE TYPE	DISTANCE FROM SITE (MILES)	TARGET(S) WITHIN DISTANCE CATEGORY	HAZARDOUS SUBSTANCE	CONCENTRATION (SPECIFY UNITS)	DETECTION LIMIT	REFERENCES
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				
			<input type="checkbox"/> Number of people _____ <input type="checkbox"/> Name of sens. environment _____ <input type="checkbox"/> Wetland acreage _____				

B-21

AIR INFORMATION

1. Is air contamination present at the site?

☐ Yes ☐ No ☐ Uncertain but likely ☒ Uncertain but not likely

☐ Additional sampling required
Is analytical evidence available? ☐ Yes ☒ NoReference(s) DOE/1995, UOS/1996a

2. Is air contamination attributable to the site?

☐ Yes ☐ No ☐ Additional sampling required NA

3. Are populations, sensitive environments, or wetlands exposed to airborne hazardous substances released from the site?

☐ Yes ☐ No ☐ Uncertain but likely ☒ Uncertain but not likely

☐ Additional sampling required
Is analytical evidence available? ☐ Yes ☒ NoReference(s) UOS/1996c4. Evidence of biogas release from any of the following source types at the site: NA
☐ Below-ground containers or tanks ☐ Landfill ☐ Buried surface impoundment

Reference(s) _____

5.* Particulate migration potential factor value: — (HRS Figure 6-2)6.* Particulate mobility factor value: — (HRS Figure 6-3)7. Distance from any incompletely contained source to nearest residence or regularly occupied area: 0.25 miles Reference(s) UOS/1996c

8. Population within 4 miles of site sources.

DISTANCE FROM SITE SOURCES	POPULATION
0 (within site sources)	<u>0</u>
1/4 mile or less	<u>1,036</u>
>1/4 to 1/2 mile	<u>1,036</u>
>1/2 to 1 mile	<u>2,071</u>
>1 to 2 miles	<u>4,143</u>
>2 to 3 miles	<u>4,143</u>
>3 to 4 miles	<u>0</u>

Reference(s) USDOC 1990

9.* Resources within 1/2 mile of site sources (HRS Section 6.3.3):

☐ Commercial agriculture

☐ Commercial silviculture

☒ Major or designated recreation area (fishery)
☐ None of the above
Reference(s) CDOW 1996

SI Data Summary

Site Name DL

10. Sensitive environments and wetlands within 4 miles of the site.

NAME/DESCRIPTION/LOCATION OF SENSITIVE ENVIRONMENT OR WETLAND	DISTANCE FROM SITE (MILES)	TYPE OF SENSITIVE ENVIRONMENT	WETLAND SIZE (ACRES)
<i>NWI maps not available</i>			

Reference(s) —

11. Using Table Air-1, summarize air analytical results for all sampling investigations. Include and identify background sample results.

TABLE SE-1: ANALYTICAL RESULTS FOR SOIL EXPOSURE PATHWAY

REFER
TO APP
TABLE 6

SAMPLE ID & DATE	SAMPLE DEPTH	TYPE OF PROPERTY <input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace	POPULATION	HAZARDOUS SUBSTANCE	CONCENTRATION (SPECIFY UNITS)	DETECTION LIMIT	REFERENCES
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					
		<input type="checkbox"/> Residence <input type="checkbox"/> School <input type="checkbox"/> Daycare center <input type="checkbox"/> Workplace					

B-17

TABLE SE-2: ANALYTICAL RESULTS FOR SOIL EXPOSURE PATHWAY

REFER TO
APP
TABLE 4 & 5

SAMPLE ID & DATE	SAMPLE DEPTH	TYPE OF TARGET	HAZARDOUS SUBSTANCE	CONCENTRATION (SPECIFY UNITS)	DETECTION LIMIT	REFERENCES
		<input type="checkbox"/> Terrestrial sensitive environment <hr/> <input type="checkbox"/> Resources* <input type="checkbox"/> Commercial agriculture <input type="checkbox"/> Commercial silviculture <input type="checkbox"/> Commercial livestock production or grazing				
		<input type="checkbox"/> Terrestrial sensitive environment <hr/> <input type="checkbox"/> Resources* <input type="checkbox"/> Commercial agriculture <input type="checkbox"/> Commercial silviculture <input type="checkbox"/> Commercial livestock production or grazing				
		<input type="checkbox"/> Terrestrial sensitive environment <hr/> <input type="checkbox"/> Resources* <input type="checkbox"/> Commercial agriculture <input type="checkbox"/> Commercial silviculture <input type="checkbox"/> Commercial livestock production or grazing				
		<input type="checkbox"/> Terrestrial sensitive environment <hr/> <input type="checkbox"/> Resources* <input type="checkbox"/> Commercial agriculture <input type="checkbox"/> Commercial silviculture <input type="checkbox"/> Commercial livestock production or grazing				

Refer To
ARR
TABLES 2 & 3

TABLE SW-1: SUMMARY OF ANALYTICAL RESULTS FOR SURFACE WATER PATHWAY

SAMPLE ID & DATE	SAMPLE TYPE	SAMPLE OBJECTIVE	TARGET NAME	HAZARDOUS SUBSTANCE	CONCENTRATION (SPECIFY UNITS)	DETECTION LIMIT	REFERENCES
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					
	<input type="checkbox"/> Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Other	<input type="checkbox"/> Release <input type="checkbox"/> Fishery <input type="checkbox"/> Drinking water <input type="checkbox"/> Sensitive environment Distance from PPE					

8-15

SOIL INFORMATION

1. Is surficial or soil contamination present at the site?

☐ Yes ☐ No ☐ Uncertain but likely ☒ Uncertain but not likely☐ Additional sampling requiredIs analytical evidence available? ☐ Yes ☒ NoReference(s) DOE 1995

2. Is surficial or soil contamination attributable to the site?

☒ Yes ☐ No ☐ Additional sampling required (*Residential*)

3. Is surficial contamination on the property and within 200 feet of a residence, school, daycare center, or workplace?

☐ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely *NA*☐ Additional sampling requiredIs analytical evidence available? ☐ Yes ☐ NoReference(s) —

4. Total area of surficial contamination (HRS Section 5.2.1.2):

NA square feetReference(s) UOS 1995a

5. Attractiveness/accessibility of the areas of observed contamination (HRS Section 5.2.1.1). Check all that apply:

☐ Designated recreational area☐ Used regularly, or accessible and unique recreational area☐ Moderately accessible with some use☐ Slightly accessible with some use☐ Accessible with no use☐ Inaccessible with some use☒ Inaccessible with no use

Reference(s)

UOS 1995c

6. Using Table SE-1, summarize analytical results detecting surficial contamination within 200 feet of a residence, school, daycare center, or workplace. Include and identify background sample results.

7. Using Table SE-2, summarize analytical results detecting surficial contamination within the boundary of a resource or a terrestrial sensitive environment. Include and identify background sample results if not listed in Table SE-1.

8. Population within 1-mile travel distance from site. Do not include populations from Table SE-1.

DISTANCE FROM SITE SOURCES	POPULATION
1/4 mile or less	<u>1036</u>
> 1/4 to 1/2 mile	<u>1036</u>
> 1/2 to 1 mile	<u>2071</u>

Reference(s)

USDOC 1990

SI Data Summary

Site Name DL

8.* Describe predominant soil group within the drainage area (HRS Section 4.1.2.1.2.1.2).

Medium textured soilsReference(s) 40 CFR, Part 300

9.* 2-year 24-hour rainfall (HRS Section 4.1.2.1.2.1.2):

1.5 inchesReference(s) Dunn & Leopold 1978

10.* Elevation of the bottom of nearest surface water body:

~ 4675 feet above sea levelReference(s) VOS 1996C

11.* Elevation of top of uppermost aquifer:

~ 4,510 feet above sea levelReference(s) VOS 1995a

12. Predominant type of water body between probable point of entry to surface water and nearest drinking water intake:

☒ River ☐ LakeReference(s) Dunbar 1990
Public Works 1996

13. Identify all drinking water intakes, fisheries, and sensitive environments within 15 miles downstream.

TARGET NAME/TYPE	WATER BODY TYPE	DISTANCE FROM PPE	FLOW (CFS)	TARGET CHARACTERISTICS	TARGET SAMPLED?
<u>Recreational fishing</u>	<u>River</u>	<u>0-15 mi</u>	<u>822</u>	<u>Stocked game species of native species (refer to AER Sec. 501 p. 14-15)</u>	<u>Y</u>
<u>Wetlands</u>	<u>River</u>	<u>0-15 mi</u>	<u>822</u>	<u>No NWE maps available</u>	<u>Y</u>

*If target is a drinking water intake, provide number of people served by intake X

If target is a fishery, provide species and annual production of human food chain organisms (pounds per year).

If target is a wetland, specify wetland frontage (in miles). Attach calculation pages.

Reference(s) CDOW 1996; VOS 1996C

14. Is surface water drinking water blended prior to distribution?

☒ Yes ☐ NoReference(s) Dunbar Public Works 1996

SI Data Summary

Site Name DL

15. Describe any standby drinking water intakes within 15 miles downstream.

None

Reference(s) Durango Public Works 1996

16. *Surface water resources within 15 miles downstream (HRS Section 4.1.2.3.3):
- ☐ Irrigation (5-acre minimum) of commercial food or commercial forage crops None
 - ☐ Commercial livestock watering
 - ☐ Ingredient in commercial food preparation
 - ☐ Major or designated water recreation area, excluding drinking water use
 - ☐ Water designated by the state for drinking water use but is not currently used
 - ☐ Water usable for drinking water but no drinking water intakes within 15 miles downstream
 - ☐ None of the above

Reference(s) Durango Public Works 1996

17. Using Table SW-1, summarize surface water analytical results for all sampling investigations. Include and identify background sample results.

NA

TABLE GW-2: ANALYTICAL RESULTS FOR GROUND WATER PATHWAY

SAMPLE ID & DATE	TYPE OF WELL <input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____	SCREENED INTERVAL	HAZARDOUS SUBSTANCE	CONCENTRATION (SPECIFY UNITS)	DETECTION LIMIT	REFERENCES
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					
	<input type="checkbox"/> Irrigation <input type="checkbox"/> Monitoring <input type="checkbox"/> Drinking water People served _____ <input type="checkbox"/> Other _____					

B-11

SURFACE WATER INFORMATION

Complete this section of the data summary for each watershed if there are multiple watersheds. Photocopy this page if necessary.

1. Describe surface water migration path from site sources to at least 15 miles downstream. Attach a sketch of the surface water migration route. (Refer to Fig. 2 of ARR)

Surface water drains from the site to the east to the Animas River and comprises the extent of the 15-mile downstream target distance limit

Reference(s)

USGS 1963b

2. Is surface water contaminated?

☒ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely ☐ Additional sampling required
Is analytical evidence available? ☐ Yes ☐ No

Reference(s) ARR data

3. Is surface water contamination attributable to the site?

☒ Yes ☐ No ☐ Additional sampling required

Reference(s) ARR

4. Floodplain category in which site sources are located (check all that apply):

☐ 1-year ☐ 10-year ☒ 100-year ☐ 500-year ☐ None

Reference(s) BOR 1981

5. Describe flood containment for each source (HRS Section 4.1.2.1.2.2):

Source #1	<u>Slag pile</u>	Flood containment	<u>Buried with backfill</u>
Source #2	<u>NA</u>	Flood containment	<u>NA</u>
Source #3		Flood containment	
Source #		Flood containment	
Source #		Flood containment	
Source #		Flood containment	
Source #		Flood containment	

Reference(s)

DOE 1995

6. Shortest overland distance to surface water from any source (HRS Section 4.1.2.1.2.1.3):

0-10 feetReference(s) US 1996a

7. Size of drainage area (HRS Section 4.4.3): 692 mi² Acres

Reference(s) USGS 1994

SI Data Summary

Site Name

DL

TABLE GW-1: SITE GEOLOGY

NAME OF FORMATION :	INTER-CONNECT? (yes/no)	TYPE OF MATERIAL	AVERAGE THICKNESS (FEET)	HYDRAULIC CONDUCTIVITY (CM/SEC)	USED FOR DRINKING WATER?
1. Alluvium	Y	Sand & gravel	15	7×10^{-3} cm/sec	N
2. Colluvium	Y	poorly sorted silty soil	25	10^{-4} cm/sec	N
3. Mancos Shale	N	low-permeability bedrock	1,700	10^{-6} cm/sec	N
4.					
5.					
6.					

Reference(s)

Jacobs 1995; Office of the Federal Register 1990

9. Does a karst aquifer underlie any site source?

☐ Yes ☒ No

Reference(s) UOS 1995a

10. Depth to top of aquifer: ~10 feet

Elevation: ~6510 Reference(s) UOS 1995a

11. In the table below, enter the number of people obtaining drinking water from wells located within 4 miles of the site. For each aquifer, attach population calculation sheets. Key aquifer to formations listed in Table GW-1.

POPULATION SERVED BY WELLS WITHIN DISTANCE CATEGORIES BY AQUIFER

DISTANCE OF WELL(S) FROM SITE SOURCES	AQUIFER A: INCLUDES FORMATIONS <u>1, 2, 3</u>	AQUIFER B: INCLUDES FORMATIONS <u>NA</u>	AQUIFER C: INCLUDES FORMATIONS <u>NA</u>
1/4 mile or less	8		
>1/4 to 1/2 mile	8		
>1/2 to 1 mile	8		
>1 to 2 miles	24		
>2 to 3 miles	21		
>3 to 4 miles	190		

Reference(s)

DOE 1995; State Engineers Office 1990; USDOC 1990

12. Is ground water from multiple wells blended prior to distribution?

☐ Yes ☒ NoReference(s) Drainage Public Works 1996

SI Data Summary

Site Name DL

13. Is ground water blended with surface water?

☐ Yes ☒ NoReference(s) Durango Public Works 1990Briefly describe: NA

14. Distance from any incompletely contained source available to ground water to nearest drinking water well (HRS Section 3.3.1):
- 1,320
- feet

Reference(s) DOE 1995

15. Briefly describe standby drinking water wells within 4 miles of sources at the site:

NoneReference(s) —

16. Using Table GW-2, summarize ground water analytical results for all sampling investigations. Include and identify background ground water sample results.

- 17.* Ground water resources within 4 miles of site sources (HRS Section 3.3.3):

- ☒ Irrigation (5-acre minimum) of commercial food or commercial forage crops
☐ Commercial livestock watering
☐ Ingredient in commercial food preparation
☐ Supply for commercial aquaculture
☐ Supply for major or designated water recreation area, excluding drinking water use
☐ Water usable for drinking water but no drinking water wells are within 4 miles
☐ None of the above

Reference(s) DOE 1995

18. Wellhead protection area (WHPA) within 4 miles of site sources (HRS Section 3.3.4):

- ☐ Source with non-zero containment factor value lies within or above WHPA
☐ Observed ground water contamination attributable to site source(s) lies within WHPA
☐ WHPA lies within 4 miles of site sources
☒ None

Reference(s) —

Additional ground water pathway description:

Refer to Section 7.0 ; groundwater pathwayReferences(s) ARR

SI Data Summary

Site Name

DL

5. Description of removal or remedial activities

If a removal has occurred, identify the removal authority and describe the activities. Specify the date(s) of the removal.

Refer to Sec. 3.2; Site History and Previous Work.

Reference(s)

app

GROUND WATER INFORMATION

1. Ground water drinking water use within 4 miles of site sources:

☐ Municipal ☐ Private ☐ Both ☒ No Drinking Water Use

Reference(s)

Durango Public Works 1990

2. Is ground water contaminated?

☒ Yes ☐ No ☐ Uncertain but likely ☐ Uncertain but not likely☐ Additional sampling requiredIs analytical evidence available? ☒ Yes ☐ NoReference(s) DOE 1995

3. Is ground water contamination attributable to the site?

☒ Yes ☐ No ☐ Additional sampling requiredReference(s) DOE 1995

4. Are drinking water wells contaminated?

☐ Yes ☒ No ☐ Uncertain but likely ☐ Uncertain but not likely☐ Additional sampling requiredIs analytical evidence available? ☒ Yes ☐ NoReference(s) DOE 1995

5. Net precipitation (HRS Section 3.1.2.2):
- 1.61
- inches

Reference(s) Univ. of Delaware 1986

6. County average number of persons per residence:
- 2.56
- Reference(s)
- USDOC 1990

7. Discuss general stratigraphy underlying the site. Attach sketch of stratigraphic column.

Refer to Sec. 3.3.2; Geology

Reference(s)

ARR

8. Using Table GW-1 (next page), summarize geology underlying the site (starting with formation #1 as closest to ground surface). Indicate if formation is interconnected with overlying formation.

SI Data Summary

Site Name

DL

4. Source characterization (Attach pages to show quantity and calculations.)

Source 1 name: Slag Pile Source type: PileDescribe source: residual slag pile; byproduct of lead smelter operationGround water migration containment: NoneSurface water migration containment: Buried with fill dirt and riprapped along shorelineAir migration (gas and migration) containment: Buried with fill dirt.Physical state of wastes: ☐ Liquid ☒ Solid ☐ Sludge/Slurry ☐ Gas ☐ UnknownConstituent quantity of hazardous substances: — (specify units)Wastestream quantity containing hazardous substances: NA (specify units)Volume of source (yd³): 200,000 Area of source (ft²): 653,400

Hazardous substances associated with source 1:

Refer ^{ARR} tables 2-5

Reference(s)

VOS 1995a : ARR dataSource 2 name: NA Source type: —Describe source: —Ground water migration containment: —Surface water migration containment: —Air migration (gas and migration) containment: —Physical state of wastes: ☐ Liquid ☐ Solid ☐ Sludge/Slurry ☐ Gas ☐ UnknownConstituent quantity of hazardous substances: — (specify units)Wastestream quantity containing hazardous substances: — (specify units)Volume of source (yd³): — Area of Source (ft²): —

Hazardous substances associated with source 2:

Reference(s)

SI Data Summary

Site Name DL

CONTINUATION PAGE FOR SOURCE CHARACTERIZATION

Source # NA Name NA Source type NADescribe source: NAGround water migration containment: NASurface water migration containment: NAAir migration (gas and migration) containment: NAPhysical state of wastes: ☐ Liquid ☐ Solid ☐ Sludge/Slurry ☐ Gas ☐ UnknownConstituent quantity of hazardous substances: NA (specify units)Wastestream quantity containing hazardous substances: NA (specify units)Volume of source (yd³): NA Area of source (ft²): NAHazardous substances associated with source # NA:

<u>NA</u>	<u>NA</u>	<u>NA</u>
<u>NA</u>	<u>NA</u>	<u>NA</u>
<u>NA</u>	<u>NA</u>	<u>NA</u>

Reference(s) NASource # NA Name NA Source type NADescribe source: NAGround water migration containment: NASurface water migration containment: NAAir migration (gas and migration) containment: NAPhysical state of wastes: ☐ Liquid ☐ Solid ☐ Sludge/Slurry ☐ Gas ☐ UnknownConstituent quantity of hazardous substances: NA (specify units)Wastestream quantity containing hazardous substances: NA (specify units)Volume of source (yd³): NA Area of source (ft²): NAHazardous substances associated with source # NA:

<u>NA</u>	<u>NA</u>	<u>NA</u>
<u>NA</u>	<u>NA</u>	<u>NA</u>
<u>NA</u>	<u>NA</u>	<u>NA</u>

Reference(s) NA

SI Data Summary

Site Name Durango Lead SmelterSite Name Durango Lead Smelter (DL) EPA Region 8 Date 8/96Contractor Name or State Office and Address URS Operating Services, Inc.1099 18th Street, Suite 710, Denver, CO 80202

GENERAL SITE INFORMATION

1. CERCLIS ID No. CO 0001399633Address SE 1/4 S. 30, T. 35N., R. 9W. of Durango W Quadrangle City DurangoCounty La Plata State CO Zip Code 81301 Congressional District 0072. Owner name CDPHE Operator name sameOwner address 4300 Cherry Creek Dr. S. Operator address -City Denver State CO City - State -

3. Type of ownership (check all that apply):

☐ Private ☐ Federal/Agency ☒ State ☐ County ☐ Municipal
☐ Other - Reference(s) CDPHE 19964. Approximate size of property: 15 acres Reference(s) DOE 19955. Latitude 37° 16' 03.00" N Longitude 107° 53' 00.00" W Reference(s) USGS 1963B6. Site status: ☐ Active ☒ Inactive ☐ Unknown Reference(s) Smith 19807. Years of operation: From: 1882 to: 1935 ☐ Unknown Reference(s) Smith 1980

8. Previous Investigations:

Type	Agency/State/Contractor	Date
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PA	EPA / UOS	3/96
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Reference(s) UOS 1996b

SI/ESP	EPA / UOS	4/96
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Reference(s) UOS 1996aReference(s) -Reference(s) -Reference(s) -Reference(s) -

WASTE SOURCE INFORMATION

1. Waste source types (check all that apply)

- ☐ Constituent
- ☐ Wastestream (type) _____
- ☐ Landfill
- ☐ Drums
- ☐ Contaminated soil
- ☐ Land treatment
- ☐ Tanks or non-drum containers (type) _____
- ☒ Pile (type) Slag Pile
- ☐ Surface impoundment (buried)
- ☐ Surface impoundment (backfilled)
- ☐ Other _____

Reference(s) CDPHE 1996

2. Types of wastes (check all that apply)

- ☐ Organic chemicals
- ☒ Inorganic chemicals
- ☐ Municipal wastes
- ☐ Radionuclides
- ☒ Metals
- ☐ Pesticides/Herbicides
- ☐ Solvents
- ☐ Other _____

Reference(s) CDPHE 1996 ; ARR data

3. Summarize history of waste disposal operations:

Refer to Sec. 3.2; Site History and Previous WorkReference(s) ARR

APPENDIX D

Validation Reports and Laboratory Data (under separate cover)